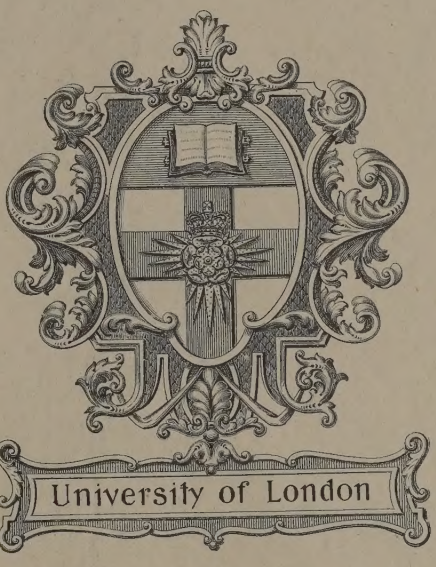
University of London

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ACCOUNTS AND PAPERS:

SIXTY-THREE VOLUMES.

—*(17.)*—

EAST INDIA—(*continued*).

Session

31 *January* 1893——5 *March* 1894.

VOL. LXVI.

1893-94.

ACCOUNTS AND PAPERS:

1893–94.

SIXTY-THREE VOLUMES:—CONTENTS OF THE SEVENTEENTH VOLUME.

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EAST INDIA (OPIUM).

RETURN to an Address of the Honourable The House of Commons, dated 11 March 1892;—*for*,

"RETURNS showing the Quantity (1) of Behar and Benares OPIUM manufactured, and (2) of Malwa OPIUM purchased, for Sale in *India* during each of the past Ten Years:"

"The Quantity of Bengal and Malwa OPIUM disposed of in each such Year (1) to each of the Provincial Excise Administrations, and (2) to the Native States which are supplied with Opium by the Indian Government:"

"And, the Quantity of Bengal and Malwa OPIUM in Stock at the close of each such Year for Consumption in *India*."

India Office,
6th February 1893.

ARTHUR GODLEY,
Under Secretary of State for India.

(*Mr. Lewis Fry.*)

Ordered, by The House of Commons, *to be Printed*,
7 *February* 1893.

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39.

RETURNS showing the Quantity (1) of Behar and Benares OPIUM manufactured, and (2) of Malwa OPIUM purchased, for Sale in *India* during each of the past Ten Years; the Quantity of Bengal and Malwa OPIUM disposed of in each such Year (1) to each of the Provincial Excise Administrations, and (2) to the Native States which are supplied with Opium by the Indian Government; and, the Quantity of Bengal and Malwa OPIUM in Stock at the close of each such Year for Consumption in India.

OPIUM MANUFACTURED AND SOLD IN INDIA.

No. 1.

Despatch from the Secretary of State for India to the Governor General of India in Council.

My Lord Marquis, Revenue, No. 26, dated 24 March 1892.

WITH reference to the enclosed Address moved in the House of Commons, I desire to be furnished with returns giving the information specified by Mr. Fry. It would be convenient that the returns should reach me not later than the 15th June, if your Excellency's Government can so arrange.

I have, &c.
(signed) *Cross.*

ENCLOSURE.

House of Commons.

11th March 1892.

Mr. Lewis Fry,—East India (Opium). Address for Returns showing the Quantity (1) of Behar and Benares Opium manufactured, and (2) of Malwa Opium purchased, for sale in India during each of the past Ten Years.

The Quantity of Bengal and Malwa Opium disposed of in each such Year (1) to each of the Provincial Excise Administrations, and (2) to the Native States which are supplied with Opium by the Indian Government.

And, the Quantity of Bengal and Malwa Opium in Stock at the close of each such Year for Consumption in India.

No. 2.

Letter from Government of India, Finance and Commerce Department (Opium), to Her Majesty's Secretary of State for India, No. 94, dated 4th May 1892.

My Lord,

WITH reference to your Lordship's Despatch (Revenue, No. 26), dated 24th March 1892, we have the honour to forward copy of a Resolution, No. 1639, dated 19th April 1892, which has been sent to all Local Governments for report, to enable us to furnish returns of the amount of opium manufactured and purchased by Government, in accordance with the Address in the House of Commons of the 11th March 1892.

2. We

2. We will endeavour to avoid delay in the preparation of the returns, but we regret that we cannot undertake to furnish the required information by the 15th June. It is improbable that Local Governments will be able to reply to our reference by that date, and we cannot complete the returns until all replies have been received, as the information contained in Provincial Excise reports is not, as a rule, sufficient to enable us to deal with the Address in a satisfactory manner.

3. From the description of the returns called for, it would appear that they are only intended to include Excise opium purchased or manufactured under the Bengal system for consumption in British India; but as there is no express limitation to opium purchased or manufactured under the Bengal system, we have taken the returns to refer to all India.

4. Your Lordship will see from the terms of our Resolution that we do not understand it to be intended that the returns should take account of opium purchased by Native States outside British territory for consumption in those Native States, nor of opium purchased by licensed vendors from private persons residing outside British territory for sale in British territory.

5. We trust that we have in these respects correctly interpreted the Address. We may explain that the form of the Address indicates some misapprehension of the system under which Malwa opium is obtained for consumption in India, and that we are in consequence not certain of the correctness of our interpretation.

We have, &c.
(signed) *Lansdowne.*
Roberts.
P. P. Hutchins.
D. Barbour.
A. E. Miller.
H. Brackenbury.
C. H. T. Crosthwaite.

Enclosure to Despatch, No. 94 of 1892.

Resolution.

Simla, 19 April 1892.

THE Secretary of State has asked that the returns specified in the Address read in the preamble may be prepared in India and submitted to him by the 15th of June 1892.

2. The Government of India understand the returns which are required to refer to Bengal or Malwa opium only which is either—

(1) Manufactured by Government; or

(2) Purchased by Government, for the supply of either British districts or Native States.

The Governor General in Council desires that this interpretation may be borne in mind by Local Governments in supplying the information which is now required from them.

3. Subject to the above explanation each Local Government, or Administration, to which a copy of this Resolution is sent, is requested to supply the Government of India with the requisite figures for the 10 years 1881–82 to 1890–91 by the earliest possible date.

4. In the case of Bengal excise opium it is understood that the information required from the Government of Bengal will include figures showing—

(1) The amount, in seers, of excise opium manufactured at the Behar and Benares factories in each year, distinguishing the amount prepared from—

(*a*) Bengal opium proper; and

(*b*) Malwa opium purchased in certain years to supplement the Bengal supply.

(2) The amount of excise opium supplied in each year to Local Governments or Native States, with a detail of the Provinces or States concerned; and

(3) The amount of manufactured excise opium remaining in stock at each of the factories, and in the Calcutta warehouse, at the close of each year.

5. The corresponding figures required from other Local Governments under the head of Bengal opium will show the amount of excise opium received from Bengal in each year for supply of the Province and its connected Native States, the latter being given separately in such detail as may be practicable. The balance remaining on stock in the Province at the close of the year should also be given.

6. In the case of Malwa opium figures should be given by those Provinces which have at any time during the 10 years purchased Malwa opium for their own use or for Native States. It is understood that in most, if not all, Provinces using Malwa opium, the arrangements in force do not involve purchase of opium by Government, and that the returns will consequently be blank. It may, however, be the case that purchases of the kind have been made in particular years, and in that case details of the amount so purchased should be given, with an explanation showing whether the opium was obtained for use in British districts or Native States. The Government of India leave it to Local Governments to decide in what detail information can be given in the case of Native States, and in the event of the returns being blank, request that a reply may be sent to that effect, with such brief remarks as may be necessary to explain the system in force.

7. It may be assumed that the Address in the House of Commons is intended to refer to opium consumed otherwise than for medical purposes, and it is unnecessary to take account in the returns of the small quantities which are in some Provinces purchased by Government for use in dispensaries, for chemical analysis, or for other similar requirements of a special nature, which do not affect the consumption of opium as the term is generally understood.

Order.—Ordered, That copy of this Resolution be sent for report to all Local Governments and Administrations, including the Agent, Governor General, Baluchistan, and the Chief Commissioner, Port Blair.

(signed) *A. Kensington*,
Depy. Secy. to the Govt. of India.

Despatch from the Secretary of State for India to the Governor General of India in Council.

My Lord Marquis, Revenue, No. 48, dated 30 June 1892.

In reply to your Excellency's letter, No. 94, dated 4th May 1892 (Finance), I desire to say that the orders passed by your Government, dated 19th April 1892, appear to explain correctly the words of Mr. Fry's Address, asking for returns of opium consumption in India.

I have, &c.
(signed) *Cross.*

Letter from Government of India, Finance and Commerce Department (Opium), to Her Majesty's Secretary of State for India, No. 207 of 1892, dated 9th August 1892.

My Lord,

WITH reference to the correspondence ending with your Lordship's Despatch (Revenue, No. 48), dated the 30th June 1892, we have now the honour to forward two statements prepared in accordance with the Address in the House of Commons of the 11th March 1892, to show the quantity of Bengal opium manufactured by Government, and of Malwa opium purchased by Government, for the supply of British districts and Native States during the 10 years 1881–82 to 1890–91.

2. As already explained to your Lordship, the statement dealing with Malwa opium does not show the total quantity of such opium consumed by the Provinces in which it is used. It shows only the quantity of such opium purchased by Government for use in those Provinces. The Bombay Presidency and the small Province of Coorg are the only parts of India in which the system in force provides for the purchase by Government of the Malwa opium required by licensed vendors. A similar arrangement has been occasionally made in Madras for the supply in certain years of a particular tract of hill country in the Vizagapatam Agency. Elsewhere, however, and to some extent also in the Bombay Presidency, the licensed vendors make their own arrangements for importing as much Malwa opium as they require to meet the demand of the localities supplied by their shops. The amounts so imported are excluded from the returns, as Government is not directly concerned with the arrangements made, and this explanation accounts both for some of the variations in the figures shown in Statement B., and for the omission from that statement of figures for Berar, Ajmere-Merwara, and the Punjab, in all of which Provinces Malwa opium is consumed, either exclusively or to supplement the supply obtained from other sources.

3. In the two last-named Provinces, Ajmere-Merwara and the Punjab, a certain quantity of opium is grown locally under the regulations in force, and supplies a part of the demand of those Provinces; but none of it is purchased by the Government, and it is therefore excluded from the returns prepared in accordance with the Address.

4. In respect of Bengal excise opium the figures in Statement A. have been compiled mainly from a special return furnished by the Government of Bengal. The amounts shown as supplied to the different Provinces in each year do not always agree with the details previously given in the Provincial excise reports. We have not thought it necessary to trouble the Local Governments concerned for an elaborate explanation of such differences as there may be. The explanation generally is that amounts shown as despatched from the Bengal factories in one year are not always credited in Provincial reports as receipts until the following year. The total discrepancy on the whole series of years is unimportant, and it is not possible now to obtain for the back years more accurate figures than those supplied by the Government of Bengal, which is necessarily in the best position to supply correct information on all matters connected with the manufacture and distribution of excise opium.

We have, &c.

(signed) *Lansdowne.*
Roberts.
P. P. Hutchins.
D. Barbour.
A. E. Miller.
H. Brackenbury.
C. H. T. Crosthwaite.

(A.)

STATEMENT showing the Quantity (in Seers) of BENGAL EXCISE OPIUM Manufactured at the PATNA and GHAZIPUR FACTORIES, the Quantity Supplied to LOCAL GOVERNMENTS and ADMINISTRATIONS, including the NATIVE STATES under their Political Control, and the Balance remaining in Stock in the several Provinces for each of the Ten Years from 1881–82 to 1890–91.

YEAR.	Bengal Excise Opium Manufactured, including Malwa Opium purchased by the Bengal Government to supplement the Supply available in the Behar and Benares Agencies.			Total Quantity of Bengal Excise Opium Manufactured.	Quantity of Excise Opium Supplied to Provinces and to Native States.												Total Quantity of Bengal Excise Opium Supplied to Provinces and Native States.	Balance of Excise Opium in Stock at the Patna and Ghazipur Factories, in the Calcutta Opium Godowns and in the Provincial Treasuries.								Total Quantity of Bengal Excise Opium remaining in Stock at the Close of each Year.
	Quantity of Excise Opium Manufactured at				To Provinces.							To Native States.					At the Patna and Ghazipur Factories.	In the Calcutta Opium Godowns.	In Provincial Treasuries.						
	Patna Factory.	Ghazipur Factory,										Supplied by													
	From Bengal Opium.	From Bengal Opium.	From Malwa Opium.		Punjab.	North Western Provinces and Oudh.	Central Provinces.	Bengal.	Assam.	Burma.	Port Blair.	Total for Provinces.	North Western Provinces and Oudh.	Central Provinces.	Bengal.	Total for Native States.			Punjab.	North Western Provinces and Oudh.	Central Provinces.	Bengal.	Assam.	Burma.	Port Blair.	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.
1881–82 -	2,02,615	82,184	—	2,84,799	–	49,869	39,600	66,960	68,460	37,080	–	2,61,969	460	Not known.	600	1,060	2,63,029	39,670	86,220	–	13,854	880	39,834	39,989	23,473	150	2,44,070
1882–83 -	1,33,311	34,985	70,278	2,38,574	–	62,020	27,920	66,180	69,720	51,720	–	2,77,560	420	4,000	600	5,020	2,82,580	55,004	26,880	–	15,496	5,720	34,066	40,291	34,188	92	2,11,737
1883–84 -	44,460	77,103	1,37,154	2,58,717	–	62,390	27,360	76,230	55,560	46,320	300	2,68,160	260	4,560	1,200	6,020	2,74,180	23,798	42,620	–	17,159	1,040	34,398	45,101	38,333	299	2,02,748
1884–85 -	1,52,532	1,33,607	1,00,623	3,86,762	–	56,640	25,760	76,480	89,280	44,220	–	2,92,380	300	4,720	600	5,620	2,98,000	36,753	1,18,420	–	12,833	5,760	36,709	73,124	49,060	41	3,22,700
1885–86 -	1,44,187	49,661	1,14,406	3,08,254	–	60,520	24,000	76,680	53,160	33,480	300	2,48,140	300	5,400	600	6,300	2,54,440	73,927	1,35,060	–	18,026	4,360	38,600	69,787	35,380	87	3,75,227
1886–87 -	21,960	1,50,212	55,504	2,27,676	8,000	56,330	14,400	75,386	54,300	50,520	300	2,59,236	120	5,080	800	6,000	2,65,236	54,847	1,16,580	Not known.	13,379	5,000	38,390	66,214	40,020	86	3,34,516
1887–88 -	1,26,107	92,231	22,820	2,41,158	8,000	62,560	22,920	75,761	57,960	49,080	600	2,76,881	40	4,840	600	5,480	2,82,361	73,224	57,000	7,725	16,861	3,680	36,676	24,007	40,765	364	2,60,302
1888–89 -	87,380	1,03,045	3,911	1,94,336	–	61,540	22,520	72,500	21,000	60,060	–	2,37,620	130	5,040	–	5,170	2,42,790	39,760	41,520	3,543	17,304	5,280	32,088	31,817	48,367	23	2,19,708
1889–90 -	27,600	2,36,821	—	2,64,421	3,200	67,940	23,000	81,340	56,940	57,480	480	2,90,380	440	6,000	600	7,040	2,97,420	26,941	21,820	2,985	14,071	3,320	35,681	14,104	53,735	123	1,77,780
1890–91 -	2,11,420	2,12,192	—	4,23,612*	4,400	73,930	33,000	82,580	46,860	62,660	480	3,08,930	310	5,480	600	6,390	3,15,320	24,933	1,32,120	3,556	29,463	3,800	41,014	23,344	58,679	231	3,17,140

* Increased manufacture in order to replenish the reserve.

(B.)

39. STATEMENT showing the Quantity (in Seers) of MALWA OPIUM purchased by the LOCAL GOVERNMENTS and ADMINISTRATIONS for Consumption in BRITISH PROVINCES and in NATIVE STATES supplied through them under Arrangements made with the GOVERNMENT, and the Balance remaining in Stock in the BRITISH PROVINCES for each of the Ten Years from 1881–82 to 1890–91.

YEAR.	Purchased for Consumption in British Provinces.			Total Quantity of Malwa Opium purchased for British Provinces.	Supplied to Native States under Arrangements with the Government.	Total Quantity of Malwa Opium purchased for British Provinces and Native States.	Balance in Stock in British Provinces.			Total Quantity of Malwa Opium in Stock at the close of each Year in British Provinces.	REMARKS.
	Bombay.	Madras.	Coorg.		Bombay States.		Bombay Government Depôts.	Madras.	Coorg.		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1881-82	30,327	7,182	- *	37,509	18,070	55,579	19,710	3,363	Not available.	23,073	The entries in this statement refer only to so much of the total quantity of Malwa opium consumed as is directly purchased by Government for supply to British districts and Native States. The figures do not include the quantity of opium imported by licensed vendors themselves under permit on payment of pass duty.
1882-83	15,034	7,094	70	22,178	12,308	34,486	21,634	5,599	,,	27,233	
1883-84	15,294	-	35	15,329	14,691	30,020	23,488	895	,,	24,383	
1884-85	11,995	-	35	12,030	9,304	21,334	20,415	-	,,	20,415	
1885-86	14,231	-	70	14,301	11,881	26,182	18,446	-	,,	18,446	
1886-87	16,858	-	35	16,893	12,196	29,089	18,847	-	,,	18,847	
1887-88	13,086	-	35	13,121	11,114	24,235	14,633	-	,,	14,633	
1888-89	17,389	5,155	35	22,579	13,327	35,906	14,898	970	,,	15,868	
1889-90	15,853	3,425	88	19,366	16,524	35,890	16,129	172	,,	16,301	
1890-91	9,568	16	35	9,619	12,371	21,990	13,919	-	,,	13,919	

* No opium was purchased by Government, but a supply of 60 seers was obtained by the contractor direct from the Madras Government.

EAST INDIA (OPIUM).

RETURNS showing the Quantity (1) of Behar and Benares OPIUM manufactured, and (2) of Malwa OPIUM purchased, for Sale in *India* during each of the past Ten Years; the Quantity of Bengal and Malwa OPIUM disposed of in each such Year (1) to each of the Provincial Excise Administrations, and (2) to the Native States which are supplied with Opium by the Indian Government; and, the Quantity of Bengal and Malwa OPIUM in Stock at the close of each such Year for Consumption in *India*.

(*Mr. Lewis Fry.*)

Ordered, by The House of Commons, *to be Printed,*
7 *February* 1893.

[*Price* 1 *d.*]

39. *Under* 1 *oz.*

EAST INDIA (OPIUM)—NORTH-WEST PROVINCES.

RETURN to an Address of the Honourable The House of Commons, dated 10 March 1893;—*for*,

"RETURN of all CORRESPONDENCE between the INDIA OFFICE and the GOVERNMENT of INDIA with regard to Confidential Circular, No. 1, of 1892, issued by the Board of Revenue of the North-West Provinces and Oudh."

India Office,
29 March 1893.

A. GODLEY,
Under Secaetary of State for India.

(*Mr. Caine.*)

Ordered, by The House of Commons, *to be Printed,*
28 *March* 1893.

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90, WEST NILE STREET, GLASGOW; or
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OPIUM.—CORRESPONDENCE regarding the CONFIDENTIAL CIRCULAR issued by the North-West Provinces and Oudh, Board of Revenue, No. 1 of 1892.

LETTER from the Government of India (Finance and Commerce Department —Opium) to the Secretary of State for India, No. 39, dated the 1st February 1893.

My Lord,

WITH reference to the letter from Mr. W. S. Caine, dated the 23rd November 1892 (copy enclosed), received with a letter from Sir Charles Bernard, dated the 25th November 1892, regarding the issue of a Confidential Circular by the Commissioner of Excise in the North-Western Provinces and Oudh on the subject of opium-smoking dens in those Provinces, we have the honour to report that the Confidential Circular No. 1 of 1892, dated 26th July, referred to in Mr. Caine's letter, was issued by the Excise Commissioner for the North-Western Provinces and Oudh. This Circular was issued under the following circumstances.

2. In our Resolution No. 4033, dated the 25th September 1891, a copy of which was forwarded to your Lordship's predecessor with our Despatch No. 289, dated the 14th October 1891, orders were issued prohibiting the consumption of opium or preparations of opium in any form on the premises of licensed shops. Certain facilities and a certain amount of preparation are required for the smoking of opium or compounds of opium, and it was anticipated that the prohibition of consumption on the premises of the licensed shops might lead to places other than licensed shops being resorted to for the smoking of opium or its preparations, and that dealings in illicit opium would be likely to occur in such places. Nevertheless it was decided to run the risk involved, and to trust to local governments to adopt the preventive measures best calculated to minimise it.

3. The Government of the North-Western Provinces and Oudh decided to give effect to the prohibition from the 1st October 1892, and, as a first step, the Excise Commissioner of those Provinces issued a Circular, dated the 28th April 1892, intimating the decision of Government to district officers. The Excise Commissioner further stated in this Circular that licenses for the manufacture and sale of madak, chandu, &c., would be granted where they then existed, and where it was thought necessary to maintain them. At the same time, in order to place an obstacle in the way of the establishment of smoking dens in private houses, the maximum quantity of any preparation of opium which might be legally possessed was reduced from three tolas to one tola.

In a later Circular, dated the 26th July 1892, the Commissioner of Excise informed district officers that no new shops for the sale of madak and chandu would be licensed for the ensuing year, but that where it was thought that the closing of existing shops would certainly lead to an increased consumption of illicit opium, the licenses then in force might be renewed for another year, subject to the restrictions regarding consumption on the premises laid down in the previous Circular of the 28th April. Under the orders of the Board of Revenue, these instructions were supplemented by a Confidential Circular No. 1 E., bearing the same date, namely, the 26th July 1892, which is the Circular referred to in Mr. Caine's letter. The object of this Circular was to impress on district officers the necessity of exercising supervision and control over the unlicensed places of resort for the smoking of madak and chandu, the opening of which was believed to be inevitable under the new system, and which, as the law stands in the North-Western Provinces and Oudh, the police

have no power to suppress. Such supervision is obviously necessary, both on general grounds and in order to prevent an increased surreptitious consumption of illicit opium. The Circular was in no way designed to encourage the use of opium, and could not have that effect. It was marked "Confidential" because it was undesirable that the public should learn that an unlicensed house could be resorted to for the smoking of opium and its preparations without breaking the law. A public intimation that the authorities have no power to prohibit or prevent the use of unlicensed premises as a place of resort for smoking opium would have encouraged the open establishment of unlicensed premises for the purpose. A copy of each of the Circulars to which we have referred is enclosed.

4. The Lieutenant Governor of the North-Western Provinces and Oudh, however, considers that the Confidential Circular is open to misinterpretation, and he has accordingly asked the Board of Revenue to withdraw it and to substitute instructions pointing out the necessity for keeping a strict watch over places at which opium-smokers congregate, in order to guard against attempts to evade the law. The Lieutenant Governor's action is approved by us.

5. We will continue to watch the results of the experiment of prohibiting the consumption of opium and its preparations on the premises of licensed shops, and we are anxious to give the system a full trial on an extended scale. In the Presidency Town of Madras the use of unlicensed premises for the consumption of opium is illegal under the operation of a local law. The Madras Government were of opinion that this provision of the law was attended with real hardship to a number of people, and recommended that licenses should be granted for the consumption of opium at a few places apart from premises licensed for the sale of opium and its preparations. We did not sanction this request, as we were anxious to give the experiment a further trial before agreeing to any modification of the conditions under which it was being carried on. A copy of the correspondence with the Government of Madras on this subject is enclosed for your Lordship's information.

6. Under the circumstances explained in this Despatch, we trust your Lordship will agree with us that there has been no attempt to evade the operation of the rule prohibiting the consumption of opium or its preparations on the premises, and no attempt to push the sale of intoxicants for the sake of the revenue they produce.

We have, &c.
(signed) *Lansdowne.*
Roberts.
P. P. Hutchins.
D. Barbour.
A. E. Miller.
H. Brackenbury.
C. B. Pritchard.

Government of India, Finance and Commerce Department.

Enclosure of Despatch, No. 39 of 1893, dated 23rd November 1892.

Demi-official from *W. S. Caine*, Esq., to *G. Russell*, Esq., M.P., India Office.

It will be my duty when the House meets to invite your attention to a confidential Circular No. 1 of 1892, dated 26th July 1892, issued by the Commissioner of Excise for the North-Western Provinces which appears to me to be the most barefaced evasion of a Government order that I have ever met with, even in India.

The Government with a flourish of trumpets announce that opium-smoking dens throughout India will be closed, and then issue a "Confidential" Circular instructing Commissioners and Collectors "to make no effort to suppress them" so long as they use licit opium. Yet I am rebuked for saying that the Government of India drive the sale of intoxicants for the sake of the revenue they produce.

CIRCULAR MEMO. No. 1 E. –II. –211, dated 28th April 1892.

From *T. Stoker*, Esq., Commissioner of Excise, North-Western Provinces and Oudh, to all District Officers, North-Western Provinces and Oudh.

WITH reference to your reply to this office General Letter No. 3909 E.–II. –21, dated 17th November 1891, I have the honour to inform you that after the current year the consumption of opium and the preparations of it in the premises licensed for sale thereof will be absolutely prohibited.

2. Licences for the manufacture and sale of chandu, madak, &c., will be granted where they exist at present and it is thought necessary to maintain them.

3. The amount of chandu and other preparations of opium which may be legally possessed without a licence will at the same time be reduced from three tolas to one tola. Possession of unprepared opium will as before remain legal up to three tolas.

4. Information of this intended change should be given to contractors and others interested.

5. If you propose to grant chandu and madak licences next year, you should report a soon as practicable to this office for information.

CRCULAR No. 4 E., dated 26th July 1892.

From *T. Stoker*, Esq., Commissioner of Excise, North-Western Provinces and Oudh, to all Commissioners and District Officers, North-Western Provinces and Oudh.

IN continuation of my Circular Memo No. 1-II.-21-1, dated 28th April 1892, I am desired to inform you that it has been decided by the Board of Revenue that no new shops for the sale of chandu and madak should be licensed for the coming year, but that where you think the closing of existing shops will certainly lead to an increased consumption of illicit opium, existing licences may be renewed for next year should you think it advisable to do so, subject to the restrictions laid down in my Circular Memo. above quoted.

No. 1 E., dated 26th July 1892 (Confidential).

From *T. Stoker*, Esq., Commissioner of Excise, North Western Provinces and Oudh, to all Commissioners and Collectors in the North-Western Provinces and Oudh.

YOU are already aware that henceforth the chandu and madak smoking is absolutely prohibited on the premises licensed for the sale of the drug. It is impossible to doubt that this prohibition will be followed by the opening in many places of unlicensed places of resort where smokers can obtain the facilities which they require, and that such places will have to be kept under observation both for general reasons and also with a view to prevent the use of illicit opium.

As the law now stands, the authorities have no power to suppress consumption on premises where opium or its preparations are not sold. There is nothing in the law to prevent any one opening a saloon for the accommodation of opium-smokers who bring their own chandu. He can supply pipes and lamps and service, and charge a fee for their use, and the law cannot touch him unless he is detected selling opium or its preparations, or found in possession of more than the legal quantity. On this point the opinion of the Board is that it is not altogether advisable that such places should be suppressed. Collectors should watch such establishments carefully so as to prevent the sale thereat of illicit opium. The known conditions of chandu-smoking render the maintenance of some common place for the consumption of the drug an almost absolute necessity. No effort should be made to suppress such places, as it is better that they should be known and thus be liable to supervision.

No. 1086 (Revenue), dated 22nd October 1892.

From *C. A. Galton*, Esq., Secretary to the Government of Madras, Revenue Department, to the Secretary to the Government of India, Finance and Commerce Department.

ADVERTING to the correspondence ending with my letter, dated 9th December 1891, No. 1173, I am directed to submit, for the orders of the Government of India, the marginally-noted Proceedings of this Government relative to certain representations made by and on behalf of certain opium-smokers in the town of Madras, and to request that, in the circumstances explained in paragraph 5 of the Proceedings, the sanction of the Government of India may be obtained for the recommendation made in the concluding sentence of that paragraph, viz., to permit this Government to grant a few licences in the Presidency Town for the consumption of opium in certain selected places apart from opium shops.

G. O. dated 22nd October 1892, No. 1085.

EXTRACT from the Proceedings of the Government of Madras, Revenue Department, No. 1085, dated 22nd October 1892.

Read again the following :—

G. O., dated 27th May 1892, Mis. No. 2597 (Revenue):—

Read the following:—

No. 29, dated 4th May 1892.

From Colonel *H. W. H. Cox*, Commissioner of Police, Madras, to the Chief Secretary to the Government of Madras.

I HAVE the honour to inform you that I have this day received an application from S. V. Ragavulu Chetty and E. Ruthnam Moodelly, opium farmers, for a licence under Section 35, City Police Act (Madras Act III. of 1888), for the consumption of intoxicating drugs at No. 5, Thaheer Sahib Baugh, Triplicane, and that I have declined to accede to their request on the ground that I should, by granting it, practically nullify one of the conditions under which the licence has been granted to applicants by the Salt and Abkari Department, viz., that the opium shall not be consumed at the place of sale. The proposed smoking shop is about 200 yards from the shop licensed for the sale of opium.

No. 810 (Judicial), dated 7th May 1892.

Endorsed by the Acting Under-Secretary to the Government of Madras.

TRANSFERRED to the Revenue Department.

No. 2597 (Revenue), dated 27th May 1892.

Order.— Recorded.

Read again the following:—

G. O., dated 9th August 1892, Mis. No. 3565 (Revenue):—

Read the following:—

No. 38, dated 6th July 1892.

From Colonel *H. W. H. Cox*, Commissioner of Police, Madras, to the Chief Secretary to the Government of Madras.

I HAVE the honour to submit, for the consideration and orders of Government, a petition (marked A.) from one John Attock, a Chinaman, requesting me either to grant him a licence for the consumption of opium on his premises or to give him an endorsement to the effect that no licence is necessary.

2. For reasons given in my letter No 29, dated 4th May 1892, I cannot grant the licence; and, so long as Section 35 of (Madras) Act III. of 1888 remains unmodified, it is clear that no place can be used for the consumption of opium without a licence.

3. On 1st June 1892 petitioner was charged before the Second Presidency Magistrate, Black Town Court, under Section 37 (Madras) Act III. of 1888, for using premises No. 132, Umpherson-street, for the consumption of opium without a licence from the Commissioner of Police. Petitioner pleaded that it was not a place of public resort, and that it was his dwelling-house wherein a few of his friends smoked opium in seasoned pipes belonging to him. [At that time petitioner's father, C. Attock, had a license to vend opium at No, 19, Stringer-street.]

4. The case was adjourned from time to time and came on for final hearing on 21st June, when Mr. Madhava Row, High Court Vakil, applied, on petitioner's behalf, for another adjournment as he had witnesses to call for the defence. The Magistrate remarked that he would go into the case and would adjourn it if he saw reason to do so. Mr. Madhava Row appears to have then left the Court, but the case was proceeded with, and petitioner, when asked whether he had any questions to put to Head Constable Jagannadha Moudelly, made a statement to the following effect :—

> "It is true the house is a smoking house. As I thought licence from the Commissioner of Police was unnecessary, I did not take out one."

5. The Magistrate convicted petitioner and sentenced him to pay a fine of 25 rupees, ordering him further to take out a licence on or before 25th June, failing which he would be liable to a penalty of 10 rupees for every day the house might be used as a smoking house without a licence. Petitioner represented to the Magistrate that he had applied for a licence, but that it had been refused. [The application to me is dated 15th June 1892, and was refused by me on the same date. It is attached for reference (marked B).]

6. It

6. It is certain that whether licensed or not places will be used as resorts by the smokers of opium and of preparations of ganja, for very few of these persons are in a position to devote a room in their own houses to this purpose, and no room can be used at the same time for purposes of smoking and dwelling. The consequence will be that either the police will wink at breaches of the law or individuals will be harassed by frequent prosecutions in which public sympathy will almost certainly be with the persons prosecuted.

7. Both these consequences appear to me to be so mischievous that I have the honour to request that the Government will be pleased either to permit me to issue licences as heretofore or to legislate for the removal of the words "or consumption" from Section 35 of (Madras) Act III. of 1888.

8. As a police officer I should prefer the former course, as it is desirable that these places should be under police inspection and control.

Read also the following :—

No. 41, dated 15th July 1892.

From Colonel *H. W. H. Cox*, Commissioner of Police, Madras, to the Chief Secretary to the Government of Madras.

In continuation of my letter No. 38, dated 6th July 1892, I have the honour to submit, for the information of Government, a petition received this morning from certain opium-smokers expatiating on the hardships caused to them by my refusal to grant licences for places for smoking opium.

No. 3565 (Revenue), dated 9th August 1892.

Order.—Referred to the Commissioner of Salt, Abkari, and Separate Revenue for early remarks.

Read the following :—

Proceedings of the Board of Revenue (Separate Revenue), dated 17th August 1892, Mis. No. 3229 :—

Read—

Endorsement of the Secretary to Government, Revenue Department, dated 9th August 1892, No. 3265.

Resolution.—In reply to the reference read above, the Board begs to remark that it is not aware of the orders under which the Commissioner of Police has been and is refusing licences for the consumption of opium on approved premises. Under Section 35 of the Police Act, III. of 1888, no place may be used for the consumption of—among other things—opium without a licence. Under Section 36 of the same Act the Commissioner of Police has power to grant such licences.

The Board is not aware why he cannot do so, but the reason is probably contained in certain correspondence which appears to have taken place between the Commissioner and Government, referred to by the former in paragraph 2 of his letter forwarded by Government, with its reference read at the head of these Proceedings.

That correspondence has not been communicated to the Board.

2. The Board entirely agrees with the Commissioner of Police as to the advisability of permitting him to issue licences for the consumption of opium on approved premises, and it considers that very real inconvenience and hardship as well as much evasion of the law must result from the prohibition of such licences. The Board further begs to point out that the hardship now complained of was anticipated by it when, under the orders of the Government of India, the smoking of opium on the premises of licensed shops was forbidden,—*vide* paragraph 8 of Board's Proceedings, No. 65, dated 17th February 1891.

Ordered thereon by the Government of Madras.

With reference to paragraph 1 of the Proceedings last read above, the Board of Revenue will be informed that the only previous correspondence between the Commissioner of Police and the Government on the subject under consideration was his letter. dated 4th May 1892, No. 29, which was recorded in G. O.. dated 27th May 1892, Mis. No. 2597 (Revenue), of which a copy was communicated to the Board.

2. In paragraph 2 of the Proceedings, the Board states that it entirely agrees with the Commissioner of Police as to the advisability of permitting him to issue licences for the consumption of opium on approved premises, and that it considers that very real inconvenience and hardship as well as much evasion of the law must result from the

prohibition of such licences. The Board goes on to say that the hardship now complained of was anticipated by it when under the orders of the Government of India the smoking of opium on the premises of licensed shops was forbidden, and it refers Government to paragraph 8 of its Proceedings, dated 17th February 1891, No. 65, disposed of in G.O., dated 19th March 1891, No. 220.

In making this last remark, the Board appears to confound two distinct communications from the Government of India.

In the Proceedings above referred to, the Board reported, with reference to a memorial submitted to the Secretary of State by the Society for the Suppression of the Opium Trade and the particular paragraph of the Proceedings to which the Board invites attention contained its remarks with reference to a prayer of the memorialists, that the granting of licences for the retail sale of opium to be consumed on the premises should be discontinued even though such a measure might lead to the establishment of illicit smoking places.

3. The Resolution in which the Government of India decided to prohibit the consumption of opium on the premises of shops was issued subsequent to the date of the Board's Proceedings quoted above, and it will be noted that, while resolving to take that step, the Government of India was prepared to consider any representations which Local Governments might make for temporary exemption of any locality from the operation of the prohibition. But the Board, when consulted on the point, reported that such exemption was unnecessary in this Presidency, and the Government of India was informed accordingly,—*vide* paragraph 1 of Board's Proceedings, dated 6th November 1891, No. 518, read in G. O., dated 9th December 1891, Nos. 1172 and 1173.

4. The Board, however, appears to be of opinion that there is nothing to prevent th Commissioner of Police from granting licences under Section 36 of the Madras City Police Act (III. of 1888) for the consumption of opium on approved premises ; but the Government considers that to grant such licences would be inconsistent with the policy which dictated the prohibition of smoking in licensed shops ; for when the Government of India resolved to order such prohibition, it did not contemplate the licensing of places other than shops for the consumption of opium. It did, indeed, apprehend that the prohibition might lead to unlicensed places being established for the smoking of opium or its preparations, and that dealings in illicit opium would be likely to occur in such places, but the Government of India decided to accept this risk.

5. The Commissioner of Police has therefore acted rightly in refusing to grant the licences applied for. At the same time, it is clear from his reports read above and the petitions forwarded by him, that his refusal is attended with a real hardship to a number of people who, having been long accustomed to the smoking of opium, find it impossible now to do without it. The hardship to these people arises from the circumstance that, while such of them as can afford to keep the expensive pipes needed for smoking are willing to let the poorer classes of smokers come to their houses and smoke there, the Police Act requires that a licence should be taken out for the consumption of any intoxicating drugs in any inclosed place or building. In these circumstances, and considering that it is not good policy to drive these people to the necessity of violating the law, His Excellency the Governor in Council resolves to refer the matter for the orders of the Government of India, with the recommendation that this Government may be permitted to grant a few licences in the Presidency Town for the consumption of opium in certain selected places a part from opium shops.

6. Pending the orders of the Government of India on this reference, the Commissioner of Police will be instructed in the Judicial Department not to prosecute opium-smokers under Section 37 of the Madras City Police Act.

No. 5026 Ex., dated 15th December 1892.

From *E. N. Baker*, Esq., Deputy Secretary to the Government of India, Finance and Commerce Department, to the Secretary to the Government of Madras (Revenue Department).

I AM directed to acknowledge the receipt of your letter No. 1086 (Revenue), dated the 22nd October 1892, requesting permission to grant a few licences in the Presidency Town for the consumption of opium in certain selected places apart from opium shops.

2. In reply, I am to say that the Government of India is aware that some hardship to individuals has resulted from the order contained in the Resolution of this Department, No. 4033, dated the 25th September 1891, prohibiting the consumption of opium or its preparations on the premises of licensed shops. It is not, however, satisfied that the effect of the prohibition, so far, has been so mischievous as to require the immediate adoption of the proposal now made ; and the Governor General in Council would prefer that the experiment initiated by the order of the 25th September 1891 should be given a further trial before sanctioning any such modification of the order as is now suggested.

DESPATCH from the Secretary of State to the Governor General of India in Council (Revenue, No. 35), dated 16th March 1893.

My Lord Marquis,

I HAVE received your Excellency's Letter, No. 39, dated the 1st February, forwarding with your remarks copies of Circular Orders issued in the North-West Provinces, and of correspondence with the Madras Government on the subject of unlicensed resorts for opium smoking. I agree with the Lieutenant Governor of the North-West Provinces that the Circular of 26th July 1892 was open to misinterpretation, and I am glad to learn from your Despatch that the Board of Revenue has been asked to withdraw it, and to substitute instructions that places at which opium smokers congregate shall be strictly watched, in order to guard against attempts to evade the law.

2. Your orders of the 25th September 1891, which were approved by my predecessor, directed that licensed opium vendors should be prohibited from permitting opium smoking on their premises. But the present Indian law does not, as I understand, prohibit resort to unlicensed opium-smoking saloons, so long as no opium is sold there, and no smoker or other person has in his possession more than the prescribed minimum quantity of opium.

3. The question arises whether the law ought not to be strengthened, so as to enable your officers to take legal steps for suppressing private opium saloons; otherwise, if unlicensed saloons for opium smoking can be established without hindrance, the object which was thought to be attained by prohibiting opium smoking on the premises of licensed opium vendors may be practically defeated. I shall be glad to learn the views of your Government on this point.

I have, &c.
(signed) *Kimberley.*

EAST INDIA (OPIUM)—NORTH-WEST PROVINCES.

RETURN of all CORRESPONDENCE between the INDIA OFFICE and the GOVERNMENT of INDIA with regard to Confidential Circular, No. 1, of 1892, issued by the Board of Revenue of the North-West Provinces and Oudh.

(*Mr. Caine.*)

Ordered, by The House of Commons, *to be Printed*,
28 *March* 1893.

[*Price* 1½ *d.*]

141. *Under* 2 *oz.*

EAST INDIA (OPIUM AND INTOXICATING LIQUORS LICENSES) (UPPER BURMA).

RETURN to an Address of the Honourable The House of Commons, dated 21 June 1892 ;—*for*,

"FURTHER RETURNS of LICENSES for the Sale of OPIUM and INTOXICATING LIQUORS issued in *Upper Burma* since the 1st day of January 1888, showing the Number of such Licenses issued; the Times at which, the Districts for which, and the Periods for which they have been issued; the Prices paid for them respectively; and the Conditions or Regulations subject to which they have been issued (in continuation of Parliamentary Paper, No. 22, of Session 1892)."

India Office,
27 March 1893.

A. GODLEY,
Under Secretary of State for India.

(*Mr. Bryce.*)

Ordered, by The House of Commons, *to be Printed*,
29 *March* 1893.

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149.

FURTHER RETURNS and FORMS of LIQUOR and OPIUM LICENSES issued during 1892–93, together with an Abstract in the Form required by Parliamentary Paper, No. 319, dated 2nd August 1888.

DESPATCH from the Secretary of State for India to the Governor General of India in Council; Revenue, No. 54, dated 21st July 1892.

My Lord Marquis,

I FORWARD, for your Excellency's information, copy of a Resolution of the House of Commons, dated 21st June 1892, asking for further returns of licenses for the sale of opium and intoxicating liquors in Upper Burma, in continuation of Parliamentary Paper, No. 22, of 1892, copy of which is enclosed.

2. I shall be glad to receive the required papers for presentation to Parliament.

I have, &c.
(signed) *Cross.*

ENCLOSURE.

House of Commons, 21st June 1892.

Resolved, That an humble Address be presented to Her Majesty, that She will be graciously pleased to give directions that there be laid before this House further Returns of Licenses for the Sale of Opium and Intoxicating Liquors issued in Upper Burma since the 1st day of January 1888, showing the Number of such Licenses issued; the Times at which, the Districts for which, and the Periods for which they have been issued; the Prices paid for them respectively; and the Conditions or Regulations subject to which they have been issued (in continuation of Parliamentary Paper, No. 22, of Session 1892).

Ordered, That the said Address be presented to Her Majesty by such Members of this House as are of Her Majesty's Most Honourable Privy Council.

LETTER from the Government of India (Finance and Commerce Department, Excise) to Her Majesty's Secretary of State for India; No. 67, dated 15th February 1893.

My Lord,

IN reply to your Lordship's Despatch, No. 54 (Revenue), dated the 21st July 1892, and subsequent telegram dated the 1st February 1893, quoted in the margin, we have the honour to submit returns of liquor and opium licenses issued in Upper Burma during 1892–93, together with specimen forms of each of the licenses referred to in Column 10 of the returns. A separate abstract of the liquor and opium licenses in the form required by Parliamentary Paper, No. 319, dated the 2nd August 1888, is also enclosed.

"Opium, Upper Burma. When may I expect reply to my Revenue Despatch, No. 54, 21st July last?"

2. The returns for 1888–89 to 1891–92, which were forwarded with our Despatch, No. 265, dated the 23rd September 1891, have been revised by the Chief Commissioner of Burma, chiefly by the addition of new columns showing the locality in which each license is held, and details of the population of the town or district supplied by the shop. We enclose copies of the revised returns in accordance with the promise made in paragraph 1 of that Despatch, and in order that the series of returns from 1888–89 to 1892–93 may be in uniform form.

We have, &c.
(signed) *Lansdowne.*
P. P. Hutchins.
D. Barbour.
A. E. Miller.
H. Brackenbury.
C. B. Pritchard.

GOVERNMENT OF INDIA.—FINANCE AND COMMERCE

RETURNS and FORMS of LIQUOR and OPIUM LICENSES issued during 1892–93, together

I.—LIQUOR.

YEAR.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued?	Area covered by each License.	Price paid for each License or Group of Licenses.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs.
1892–93	Mandalay	1	1 April 1892	To work a distillery after the English method	One year	—	100
,,	ditto	2	ditto	ditto	ditto	—	100
,,	ditto	3	ditto	To work a brewery after the English method	ditto	—	100
,,	ditto	4	ditto	Wholesale vend of distillery liquor	ditto	—	50
,,	ditto	5	ditto	ditto	ditto	—	50
,,	ditto	6	ditto	ditto	ditto	—	50
,,	ditto	7	ditto	Retail vend of malt liquor	ditto	—	8,520
,,	ditto	8	ditto	ditto	ditto	—	
,,	ditto	9	ditto	ditto	ditto	—	
,,	ditto	10	ditto	ditto	ditto	—	
,,	ditto	11	ditto	ditto	ditto	—	
,,	ditto	12	ditto	Wholesale vend of foreign spirit	ditto	—	100
,,	ditto	13	ditto	ditto	ditto	—	100
,,	ditto	14	ditto	ditto	ditto	—	100
,,	ditto	15	ditto	ditto	ditto	—	100
,,	ditto	16	ditto	ditto	ditto	—	100
,,	ditto	17	ditto	ditto	ditto	—	100
,,	ditto	18	ditto	ditto	ditto	—	100
,,	ditto	19	ditto	ditto	ditto	—	100
,,	ditto	20	ditto	ditto	ditto	—	100
,,	ditto	21	ditto	Retail vend of foreign spirit and foreign fermented liquor in quantities of not less than one pint bottle, not to be drunk on the premises.	ditto	—	1,000
,,	ditto	22	ditto	ditto	ditto	—	1,000
,,	ditto	23	ditto	ditto	ditto	—	1,000
,,	ditto	24	ditto	ditto	ditto	—	1,000
,,	ditto	25	ditto	Retail vend of foreign spirit to be drunk on the premises.	ditto	—	12,050
,,	ditto	26	ditto	ditto	ditto	—	
,,	ditto	27	ditto	ditto	ditto	—	
,,	ditto	28	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	—	30,150
,,	ditto	29	ditto	ditto	ditto	—	
,,	ditto	30	ditto	ditto	ditto	—	
,,	ditto	31	ditto	ditto	ditto	—	
,,	ditto	32	ditto	ditto	ditto	—	
,,	ditto	33	ditto	ditto	ditto	—	
,,	ditto	34	ditto	ditto	ditto	—	
,,	ditto	35	ditto	Retail vend of foreign spirit not manufactured in Asia, to be drunk in a hotel.	ditto	—	100
,,	ditto	36	ditto	Retail vend of foreign spirit not manufactured in Asia, to be drunk at a bar, in a hotel, or railway refreshment room.	ditto	—	500
,,	ditto	37	ditto	ditto	ditto	—	500
,,	ditto	38	ditto	Retail vend of tari to the public	ditto	—	8,415
,,	ditto	39	ditto	ditto	ditto	—	
,,	ditto	40	ditto	ditto	ditto	—	
,,	ditto	41	ditto	ditto	ditto	—	
,,	ditto	42	ditto	ditto	ditto	—	
,,	ditto	43	ditto	ditto	ditto	—	
,,	ditto	44	ditto	ditto	ditto	—	
,,	ditto	45	ditto	ditto	ditto	—	
,,	ditto	46	ditto	ditto	ditto	—	
,,	ditto	47	ditto	ditto	ditto	—	
,,	ditto	48	ditto	ditto	ditto	—	
,,	ditto	49	ditto	ditto	ditto	—	
,,	ditto	50	ditto	ditto	ditto	—	
,,	ditto	51	ditto	ditto	ditto	—	
,,	ditto	52	ditto	ditto	ditto	—	
,,	ditto	53	ditto	ditto	ditto	—	
,,	Bhamo	1	ditto	Wholesale vend of distillery liquor	ditto	—	50
,,	ditto	2	ditto	Retail vend of distillery liquor	ditto	—	2,160
,,	ditto	3	ditto	ditto	ditto	—	
,,	ditto	4	ditto	Wholesale vend of foreign spirit	ditto	—	100
,,	ditto	5	ditto	ditto	ditto	—	100
,,	ditto	6	ditto	Retail vend of foreign spirit	ditto	—	1,000
,,	ditto	7	ditto	ditto	ditto	—	1,000
,,	ditto	8	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	—	2,450
,,	ditto	9	ditto	ditto	ditto	—	
,,	ditto	10	ditto	Manufacture and sale of country spirit to be drunk on the premises or removed.	ditto	—	9,760
,,	ditto	11	ditto	ditto	ditto	—	
,,	ditto	12	ditto	ditto	ditto	—	
,,	ditto	13	ditto	ditto	ditto	—	
,,	ditto	14	ditto	ditto	ditto	—	
,,	ditto	15	ditto	ditto	ditto	—	
,,	ditto	16	ditto	Retail vend of country spirit	ditto	—	
,,	ditto	17	ditto	ditto	ditto	—	
,,	ditto	18	ditto	ditto	ditto	—	

* All Shan-Burmans; no pure Burmans.

DEPARTMENT.—Enclosures to Despatch No. 67 of 1893.

with an Abstract in the Form required by Parliamentary Paper, No. 319, dated 2nd August 1888.

I.—LIQUOR.

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee. 9.	Conditions of License. 10.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, and Non-Burmans who are not Buddhists. 11.	Place at which the License is or was held. 12.	Total Population of the Place. 13.	Number of Non-Burmans in the Town or Village. 14.	Total Burman Population of the District. 15.	Total Non-Burman Population. 16.	Total Burman and Non-Burman Population of the whole Area supplied. 17.
Fixed fee	Form I.							
ditto	ditto							
ditto	ditto							
ditto	Form II.							
ditto	ditto							
ditto	ditto							
Auction	Form III. A.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
Fixed fee	Form IV.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto		Mandalay Town					
ditto	Form V.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
Auction	Form VI.							
ditto	ditto							
ditto	ditto							
ditto	Form VIII.	29,465		188,815	29,465	326,963	47,097	The Mandalay Brewery's sales extend to the greater part of Upper Burma.
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto		Amarapura					
Fixed fee	Form IX.							
ditto	Form X.		Mandalay					
ditto	ditto							
Auction	Form XV.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto		Mandalay Town					
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto		Amarapura					
ditto	ditto							
ditto	ditto							
Fixed fee	Form II.							
Auction	Form III.		Bhamo	8,048	5,210			
ditto	ditto							
Fixed fee	Form IV.							
ditto	ditto		Mogaung	2,427	922			
ditto	Form V.		Bhamo	8,048	5,210			
ditto	ditto		Mogaung	2,427	922			
Auction	Form VIII.		Bhamo	8,048	5,210			
ditto	ditto	33,482	Mogaung	2,427	922	20,775	33,482	—
ditto	Form XII. B.		Bhamo	8,048	5,210			
ditto	ditto		Jade Mines	Not known				
ditto	ditto		Sikaw*	160	160			
ditto	ditto		Mogaung	2,427	922			
ditto	ditto		Myitkyina*	89	89			
ditto	ditto		Löntön*	169	169			
ditto	Form XIII.		Bhamo	8,048	5,210			
ditto	ditto		Talawgyi*	264	264			
ditto	ditto		Kamaing*	214	214			

I.—Liquor—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued?	Area covered by each License.	Price paid for each License or Group of Licenses.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs.
1892-93	Katha	1	1 April 1892	Retail vend of distillery liquor	One year	–	3,225
,,	ditto	2	ditto	ditto	ditto	–	
,,	ditto	3	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	4	ditto	Retail vend of foreign spirit not to be drunk on the premises.	ditto	–	3,000
,,	ditto	5	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	4,350
,,	ditto	6	ditto	Manufacture and sale of country spirit to be drunk on the premises or removed.	ditto	–	5,950
,,	ditto	7	ditto	ditto ditto	ditto	–	
,,	ditto	8	ditto	ditto ditto	ditto	–	
,,	Ruby Mines	1	ditto	Wholesale vend of distillery liquor	ditto	–	50
,,	ditto	2	ditto	ditto	ditto	–	50
,,	ditto	3	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	4	ditto	Retail vend of foreign spirit	ditto	–	1,000
,,	ditto	5	ditto	Retail vend of foreign spirit not to be drunk on the premises.	ditto	–	700
,,	ditto	6	ditto	Manufacture and sale of country spirit to be be drunk on the premises or removed.	ditto	–	13,200
,,	ditto	7	ditto	ditto ditto	ditto	–	
,,	Shwebo	1	ditto	Retail vend of distillery liquor	ditto	–	4,110
,,	ditto	2	ditto	ditto	ditto	–	
,,	ditto	3	ditto	ditto	ditto	–	
,,	ditto	4	ditto	Retail vend of malt liquor	ditto	–	300
,,	ditto	5	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	6	ditto	Retail vend of foreign spirit not to be drunk on the premises.	ditto	–	3,200
,,	ditto	7	ditto	Retail vend of foreign spirit not manufactured in Asia, to be drunk at a bar, in a hotel, or railway refreshment room.	ditto	–	500
,,	ditto	8	ditto	Manufacture and sale of country spirit to be drunk on the premises or removed.	ditto	–	1,950
,,	ditto	9	ditto	Retail vend of country spirit	ditto	–	
,,	ditto	10	ditto	ditto	ditto	–	
,,	ditto	11	ditto	Retail vend of tari to the public	ditto	–	3,360
,,	ditto	12	ditto	ditto	ditto	–	
,,	ditto	13	ditto	ditto	ditto	–	
,,	ditto	14	ditto	ditto	ditto	–	
,,	ditto	15	ditto	ditto	ditto	–	
,,	ditto	16	ditto	ditto	ditto	–	
,,	ditto	17	ditto	ditto	ditto	–	
,,	ditto	18	ditto	ditto	ditto	–	
,,	ditto	19	ditto	ditto	ditto	–	
,,	ditto	20	ditto	ditto	ditto	–	
,,	ditto	21	ditto	ditto	ditto	–	
,,	Ye-u	1	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	2	ditto	Retail vend of foreign spirit not to be drunk on the premises.	ditto	–	400
,,	ditto	3	ditto	Manufacture and vend of country spirit	ditto	–	860
,,	ditto	4	ditto	Retail vend of tari to the public	ditto	–	550
,,	ditto	5	ditto	ditto	ditto	–	
,,	ditto	6	ditto	ditto	ditto	–	
,,	Sagaing	1	ditto	Retail vend of distillery liquor	ditto	–	880
,,	ditto	2	ditto	ditto	ditto	–	
,,	ditto	3	ditto	Sale of malt liquor made in Burma	ditto	–	300
,,	ditto	4	ditto	ditto	ditto	–	300
,,	ditto	5	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	6	ditto	Retail vend of foreign spirit not manufactured in Asia.	ditto	–	1,000
,,	ditto	7	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	520
,,	ditto	8	ditto	Retail vend of foreign spirit not manufactured in Asia, to be drunk at a bar, in a hotel, or railway refreshment room.	ditto	–	500
,,	ditto	9	ditto	Retail vend of imported foreign spirit to be drunk on a steamer.	ditto	–	20
,,	ditto	10	ditto	Retail vend of tari to the public	ditto	–	3,535
,,	ditto	11	ditto	ditto	ditto	–	
,,	ditto	12	ditto	ditto	ditto	–	
,,	ditto	13	ditto	ditto	ditto	–	
,,	Lower Chindwin	1	ditto	Retail vend of distillery liquor	ditto	–	300
,,	ditto	2	ditto	Retail sale of malt liquor made in Burma	ditto	–	300
,,	ditto	3	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	4	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	3,050
,,	ditto	5	ditto	Retail vend of tari to the public	ditto	–	1,650
,,	Upper Chindwin	1	ditto	Retail vend of distillery liquor	ditto	–	660
,,	ditto	2	ditto	ditto	ditto	–	350
,,	ditto	3	ditto	ditto	ditto	–	900
,,	ditto	4	ditto	Retail sale of malt liquor made in Burma	ditto	–	300
,,	ditto	5	ditto	ditto ditto	ditto	–	300
,,	ditto	6	ditto	Retail sale of foreign spirit to be drunk on the premises or removed.	ditto	–	2,110
,,	ditto	7	ditto	ditto ditto	ditto	–	1,010
,,	ditto	8	ditto	ditto ditto	ditto	–	3,240
,,	ditto	9	ditto	ditto ditto	ditto	–	500
,,	ditto	10	ditto	Retail vend of tari to the public	ditto	–	110
,,	ditto	11	ditto	ditto	ditto	–	110
,,	ditto	12	ditto	ditto	ditto	–	160

* Exclusive of coolies of the Railway Department.

I.—Liquor—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, and Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form III.		Katha	2,596	1,073			
ditto	ditto		Tigyaing	1,190	500			
Fixed fee	Form IV.		Katha	2,596	1,073			
Auction	Form VI.		Wuntho	850	850			
ditto	Form VIII.	16,225	Katha	2,596	1,073	43,104	16,225	—
ditto	Form XII. B.		Mawlu	430	430			
ditto	ditto		Banmauk	–	–			
ditto	ditto		Wuntho	850	850			
Fixed fee	Form II.		Mogôk	4,401	2,816			
ditto	ditto		Bernardmyo	703	260			
ditto	Form IV.		Mogôk	4,401	2,816			
ditto	Form V.		ditto					
Auction	Form VI.	14,568	Thabeikkyin	2,139	326	11,566	14,568	—
ditto	Form XII. B.		Mogôk	4,401	2,816			
ditto	ditto		Thabeikkyin	2,139	326			
ditto	Form III.		Shwebo	2,368	2,583			
ditto	ditto		Kyaukmyaing	1,497	24			
ditto	ditto		Thitseingyi	2,505	33			
Fixed fee	Form III. A.		Shwebo	2,368	2,583			
ditto	Form IV.		ditto					
Auction	Form VI.		ditto					
Fixed fee	Form X.		ditto					
Auction	Form XII. B.	There are about 3,700 non-Burman residents in places where shops are open	Kambalu	766	350			
ditto	Form XIII.		Myedu	1,459	338	129,853	5,402	—
ditto	ditto		Zigôn	–	–			
ditto	Form XV.		Shwebo	9,368	2,583			
ditto	ditto		Kyaukmyaing	1,510	24			
ditto	ditto		Thitseingyi	2,505	33			
ditto	ditto		Sheinmaga	1,635	13			
ditto	ditto		Halingyi	1,962	1			
ditto	ditto		Kinu	1,674	34			
ditto	ditto		Tantabin	1,752	*70			
ditto	ditto		Malu	2,338	36			
ditto	ditto		Myedu	1,459	338			
ditto	ditto		Kawthandi	816	200			
ditto	ditto		Nyaungbintha	963	7			
Fixed fee	Form IV.							
Auction	Form VI.							
ditto	Form XII. B.	551	Ye-u	3,178	551	91,332	1,217	—
ditto	Form XV.							
ditto	ditto		Tabayin	–	–			
ditto	ditto		Thazi	–	–			
ditto	Form III.		Sagaing	9,934	1,723			
ditto	ditto		Myinmu	3,422	215			
Fixed fee	Form III. A.		Sagaing	9,934	1,723			
ditto	ditto		Ywataung	3,422	215			
ditto	Form IV.		Sagaing	9,934	1,723			
ditto	Form V.							
Auction	Form VIII.		Myinmu	3,422	215			
Fixed fee	Form X.	4,460				243,747	4,460	—
ditto	Form XI.		Sagaing	9,934	1,723			
Auction	Form XV.							
ditto	ditto		Tada-u	–	–			
ditto	ditto		Myotha	–	–			
ditto	ditto		Myinmu	3,422	215			
ditto	Form III.							
Fixed fee	Form III. A.	There are 1,191 non-Burman residents.	Mônywa	6,316	206	231,054	1,191	—
ditto	Form IV.							
Auction	Form VIII.							
ditto	Form XV.							
ditto	Form III.		Kalewa	1,500	375			
ditto	ditto		Mingin	3,894	974			
ditto	ditto		Kindat	1,690	567			
Fixed fee	Form III. A.		Mingin	3,894	974			
ditto	ditto		Kindat	1,690	567			
Auction	Form VIII.		Kalewa	1,500	375			
ditto	ditto	21,443	Mingin	3,894	974	75,785	21,443	—
ditto	ditto		Kindat	1,690	567			
ditto	ditto		Kalemyo	1,992	398			
ditto	Form XV.		Kalewa	1,500	375			
ditto	ditto		Kindat	1,690	567			
ditto	ditto		Mingin	3,894	974			

I.—Liquor—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued.	Area covered by each License.	Price paid for each License or Group of Licenses.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs.
1892-93	Myingyan	1	1 April 1892	Retail vend of distillery liquor	One year	–	1,500
,,	ditto	2	ditto	Retail vend of malt liquor made in Burma	ditto	–	300
,,	ditto	3	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	4	ditto	ditto	ditto	–	100
,,	ditto	5	ditto	Retail vend of foreign spirit not manufactured in Asia.	ditto	–	1,000
,,	ditto	6	ditto	Retail vend of foreign spirit not to be drunk on the premises.	ditto	–	1,700
,,	ditto	7	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	3,520
,,	ditto	8	ditto	ditto	ditto	–	
,,	ditto	9	ditto	Retail vend of foreign spirit not manufactured in Asia, to be drunk at a bar, in a hotel, or railway refreshment room.	ditto	–	500
,,	ditto	10	ditto	Retail vend of tari to the public	ditto	–	6,850
,,	ditto	11	ditto	ditto	ditto	–	
,,	ditto	12	ditto	ditto	ditto	–	820
,,	ditto	13	ditto	ditto	ditto	–	330
,,	ditto	14	ditto	ditto	ditto	–	260
,,	ditto	15	ditto	ditto	ditto	–	150
,,	ditto	16	ditto	ditto	ditto	–	300
,,	ditto	17	ditto	ditto	ditto	–	400
,,	ditto	18	ditto	ditto	ditto	–	450
,,	ditto	19	ditto	ditto	ditto	–	220
,,	Pakôkku	1	ditto	License to work a distillery	ditto	–	50
,,	ditto	2	ditto	Wholesale vend of distillery liquor	ditto	–	50
,,	ditto	3	ditto	Retail vend of distillery liquor	ditto	–	960
,,	ditto	4	ditto	Retail vend of beer made in Burma	ditto	–	300
,,	ditto	5	ditto	ditto	ditto	–	300
,,	ditto	6	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	7	ditto	ditto	ditto	–	100
,,	ditto	8	ditto	Retail vend of foreign spirit not to be drunk on the premises.	ditto	–	2,020
,,	ditto	9	ditto	ditto ditto	ditto	–	
,,	ditto	10	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	2,910
,,	ditto	11	ditto	ditto ditto	ditto	–	
,,	ditto	13	ditto	ditto ditto	ditto	–	100
,,	ditto	14	ditto	Retail vend of foreign spirit not manufactured in Asia to be drunk in a hotel.	ditto	–	100
,,	ditto	15	ditto	Retail vend of tari to the public	ditto	–	
,,	ditto	16	ditto	ditto	ditto	–	
,,	ditto	17	ditto	ditto	ditto	–	
,,	ditto	18	ditto	ditto	ditto	–	
,,	ditto	19	ditto	ditto	ditto	–	7,635
,,	ditto	20	ditto	ditto	ditto	–	
,,	ditto	21	ditto	ditto	ditto	–	
,,	ditto	22	ditto	ditto	ditto	–	
,,	ditto	23	ditto	ditto	ditto	–	
,,	Minbu	1	ditto	Retail vend of distillery liquor	ditto	–	300
,,	ditto	2	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	3	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	2,010
,,	ditto	4	ditto	ditto ditto	ditto	–	80
,,	ditto	5	ditto	ditto ditto	ditto	–	100
,,	ditto	5a	ditto	ditto ditto	ditto	–	190
,,	ditto	6	ditto	Retail vend of tari to the public	ditto	–	2,125
,,	ditto	7	ditto	ditto	ditto	–	1,070
,,	ditto	8	ditto	ditto	ditto	–	1,315
,,	ditto	9	ditto	ditto	ditto	–	600
,,	ditto	10	ditto	ditto	ditto	–	220
,,	ditto	11	ditto	ditto	ditto	–	190
,,	ditto	12	ditto	ditto	ditto	–	320
,,	ditto	13	ditto	ditto	ditto	–	457
,,	ditto	14	ditto	ditto	ditto	–	102
,,	ditto	15	ditto	ditto	ditto	–	100
,,	ditto	16	ditto	ditto	ditto	–	50
,,	ditto	17	ditto	ditto	ditto	–	50
,,	ditto	18	ditto	ditto	ditto	–	140
,,	Magwè	1	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	550
,,	ditto	2	ditto	ditto ditto	ditto	–	280
,,	ditto	3	ditto	Manufacture and vend of country spirit	ditto	–	650
,,	ditto	4	ditto	Retail vend of tari to the public	ditto	–	3,000
,,	ditto	5	ditto	ditto	ditto	–	840
,,	ditto	6	ditto	ditto	ditto	–	1,600
,,	ditto	7	ditto	ditto	ditto	–	175
,,	ditto	8	ditto	ditto	ditto	–	370
,,	ditto	9	ditto	ditto	ditto	–	70
,,	ditto	10	ditto	ditto	ditto	–	210
,,	ditto	11	ditto	ditto	ditto	–	340
,,	ditto	12	ditto	ditto	ditto	–	360
,,	ditto	13	ditto	ditto	ditto	–	560
,,	ditto	14	ditto	ditto	ditto	–	170
,,	Kyauksè	1	ditto	Wholesale vend of distillery liquor	ditto	–	50
,,	ditto	2	ditto	Retail vend of distillery liquor	ditto	–	975
,,	ditto	3	ditto	ditto	ditto	–	
,,	ditto	4	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	2,255
,,	ditto	5	ditto	ditto ditto	ditto	–	
,,	ditto	6	ditto	Retail vend of foreign spirit not manufactured in Asia, to be drunk at a bar, in a hotel, or railway refreshment room.	ditto	–	250
,,	ditto	7	ditto	Retail vend of tari to the public	ditto	–	1,275
,,	ditto	8	ditto	ditto	ditto	–	

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, and Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form III.		Myingyan	19,790	5,230			
Fixed fee	Form III. A.							
ditto	Form IV.							
ditto	ditto		Pagan	7,397	63			
ditto	Form V.		Myingyan	19,790	5,230			
Auction	Form VI.							
ditto	Form VIII.		Pagan	7,397	63			
ditto	ditto							
Fixed fee	Form X.	6,415				344,996	6,415	—
Auction	Form XV.		Myingyan	19,790	5,230			
ditto	ditto							
ditto	ditto		Pagan	7,397	63			
ditto	ditto		Salè	—	—			
ditto	ditto		Singu	—	—			
ditto	ditto		Taungtha	—	—			
ditto	ditto		Tanaungdaing	—	—			
ditto	ditto		Sameitkôn	—	—			
ditto	ditto		Natogyi	—	—			
ditto	ditto		Kyaukpadaung	—	—			
Fixed fee	Form I.							
ditto	Form II.		Pakôkku	18,897	608			
Auction	Form III.							
Fixed fee	Form III. A.							
ditto	ditto		Gangaw	6,698	900			
ditto	Form IV.		Pakôkku	18,897	608			
ditto	ditto		Budagôn	200	950			
Auction	Form VI.		Pakôkku	18,897	608			
ditto	ditto		Budagôn	200	950			
ditto	Form VIII.	18,877	Pakôkku	18,897	608	284,876	18,877	—
ditto	ditto		Pauk	4,927	543			
ditto	ditto		Gangaw	6,698	900			
Fixed fee	Form IX.		Pakôkku	18,897	608			
Auction	Form XV.		ditto					
ditto	ditto		ditto					
ditto	ditto		Pauk	4,927	543			
ditto	ditto		Yesagyo	—	—			
ditto	ditto		Myaing	—	—			
ditto	ditto		Pakangyi	—	—			
ditto	ditto		Ma-u	—	—			
ditto	ditto		Myitchi	—	—			
ditto	ditto		Kanywa	—	—			
Fixed fee	Form III. A.		Minbu	7,270	1,417			
ditto	Form IV.		ditto					
Auction	Form VIII.		ditto					
ditto	ditto		Sagu	7,479	90			
ditto	ditto		Salin	10,345	200			
ditto	ditto		Sinbyugyun	—	—			
ditto	Form XV.		Minbu	7,270	1,417			
ditto	ditto		Sagu	7,479	90			
ditto	ditto		Salin	10,345	200			
ditto	ditto	18,395	Sinbyugyun	—	—	206,080	18,395	—
ditto	ditto		Taukthabin	—	—			
ditto	ditto		Ngapè	—	—			
ditto	ditto		Legaing	—	—			
ditto	ditto		Pwinbyu	—	—			
ditto	ditto		Sidôktaya	—	—			
ditto	ditto		Sun	—	—			
ditto	ditto		Dabwin	—	—			
ditto	ditto		Danyaung	—	—			
ditto	ditto		Sinbut	—	—			
ditto	Form VIII.		Magwe	7,000	900			
ditto	ditto		Taungdwingyi	5,687	459			
ditto	Form X.		ditto					
ditto	Form XV.		Magwe	7,000	900			
ditto	ditto		Taungdwingyi	5,687	459			
ditto	ditto		Yenangyaung	4,500	300			
ditto	ditto	2,549	Gyogôn	2,814	30	216,641	2,549	—
ditto	ditto		Myingyan	5,000	150			
ditto	ditto		Minywa	—	—			
ditto	ditto		Megyaungyè	1,000	20			
ditto	ditto		Natmauk	1,500	40			
ditto	ditto		Satthwa	1,500	40			
ditto	ditto		Myothit	1,000	60			
ditto	ditto		Shwebandaw	4,000	40			
Fixed fee	Form II.		Kyauksè	6,000	1,000			
Auction	Form III.		Myittha	1,500	33			
ditto	ditto							
ditto	Form VIII.	There are 1,062 Non-Burman residents in the places where shops are open in the district.	Kyauksè	6,000	1,000			
ditto	ditto		Myittha	1,500	33	119,374	7,248	—
Fixed fee	Form X.		Thabyudaung	351	29			
Auction	Form XV.		Kyauksè	6,000	1,000			
ditto	ditto		Myittha	1,500	33			

I.—Liquor—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued?	Area covered by each License.	Price paid for each License or Group of Licenses.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs.
1892–93	Meiktila	1	1 April 1892	Wholesale vend of distillery liquor	One year	–	50
,,	ditto	2	ditto	Retail vend of distillery liquor	ditto	–	1,880
,,	ditto	3	ditto	ditto	ditto	–	
,,	ditto	4	ditto	Retail vend of malt liquor made in Burma	ditto	–	300
,,	ditto	5	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	6	ditto	Retail vend of foreign spirit	ditto	–	1,000
,,	ditto	7	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	1,340
,,	ditto	8	ditto	Retail vend of foreign spirit not manufactured in Asia to be drank at a bar, in a hotel, or railway refreshment room.	ditto	–	250
,,	ditto	9	ditto	Retail vend of tari to the public	ditto	–	2,340
,,	ditto	10	ditto	ditto	ditto	–	
,,	ditto	11	ditto	ditto	ditto	–	
,,	Yamèthin	1	ditto	Retail vend of distillery liquor	ditto	–	870
,,	ditto	2	ditto	ditto	ditto	–	
	ditto	3					
,,	ditto	4	ditto	Retail vend of malt liquor made in Burma	ditto	–	300
,,				Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	5	ditto	ditto	ditto	–	100
,,				ditto	ditto	–	100
	ditto	6	ditto				
,,	ditto	7	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	2,900
,,	ditto	8	ditto	ditto ditto	ditto	–	
,,				ditto ditto	ditto	–	
,,	ditto	9	ditto	Retail vend of foreign spirit not manufactured in	ditto	–	250
	ditto	10	ditto	Asia to be drunk at a bar, in a hotel, or railway refreshment room.			
,,	ditto	11	ditto	Retail vend of tari to the public	ditto	–	1,200
,,	ditto	12	ditto	ditto	ditto	–	
,,	Pyinmana	1	ditto	Retail vend of distillery liquor	ditto	–	1,150
,,	ditto	2	ditto	Retail vend of malt liquor made in Burma	ditto	–	300
,,	ditto	3	ditto	Wholesale vend of foreign spirit	ditto	–	100
,,	ditto	4	ditto	ditto	ditto	–	100
,,	ditto	5	ditto	Retail vend of foreign spirit to be drunk on the premises or removed.	ditto	–	6,750
,,	ditto	6	ditto	ditto	ditto	–	
,,	ditto	7	ditto	Retail vend of tari to the public	ditto	–	1,010
,,	ditto	8	ditto	ditto	ditto	–	

II.—OPIUM.

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, and what kind of Opium.	For what Period each License Issued?	Area covered by each License, *i. e.* Area of District.	Price paid for each License or Group of Licenses.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs.
1892–93	Mandalay	1	1 April 1892	Sale by retail of opium	One year	–	20,000
,,	ditto	2	ditto	ditto	ditto	–	
,,	ditto	3	ditto	ditto	ditto	–	
,,	ditto	4	ditto	ditto	ditto	–	
,,	ditto	5	ditto	Sale by wholesale of opium	ditto	–	20
,,	Bhamo	1	ditto	Sale by retail of opium	ditto	–	2,880
,,	ditto	2	ditto	ditto	ditto	–	
,,	ditto	3	ditto	Sale by wholesale of opium	ditto	–	20
,,	ditto	4	ditto	ditto	ditto	–	20
,,	Katha	1	ditto	Sale by retail of opium	ditto	–	4,475
,,	ditto	2	ditto	ditto	ditto	–	
,,	ditto	3	ditto	ditto	ditto	–	
,,	ditto	4	ditto	Sale by wholesale of opium	ditto	–	20
,,	Ruby Mines	1	ditto	Sale by retail of opium	ditto	–	7,400
,,	Myingyan	1	ditto	ditto	ditto	–	4,000
,,	ditto	2	ditto	Sale by wholesale of opium	ditto	–	20
,,	Pakôkku	1	ditto	Sale by retail of opium	ditto	–	2,050
,,	Minbu	1	ditto	ditto	ditto	–	4,640
,,	ditto	2	ditto	ditto	ditto	–	
,,	Lower Chindwin	1	ditto	ditto	ditto	–	2,050
,,	Upper Chindwin	1	ditto	ditto	ditto	–	570
,,	Yamèthin	1	ditto	ditto	ditto	–	3,250
,,	Pyinmana	1	ditto	ditto	ditto	–	8,000

I.—Liquor—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, and Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Fixed fee	Form II.	There are about 1,097 Non-Burman residents in the places where shops are open in the district.	Meiktila	3,983	1,034	202,880	3,770	—
Auction	Form III.		Thazi	211	55			
- ditto	- ditto		Meiktila	3,983	1,034			
Fixed fee	Form III. A.		Thazi	211	55			
- ditto	Form IV.		Mahlaing	2,005	5			
- ditto	Form V.							
Auction	Form VIII.							
Fixed fee	Form X.							
Auction	Form XV.							
- ditto	- ditto							
- ditto	- ditto							
- ditto	Form III.	There are about 3,124 Non-Burman residents in the places where shops are open in the district.	Yamèthin	6,584	2,111	152,271	8,351	—
- ditto	- ditto		Pyawbwè	4,263	1,013			
Fixed fee	Form III. A.		Yamèthin	6,584	2,111			
- ditto	Form IV.		Pyawbwè	4,263	1,013			
- ditto	- ditto		Yamèthin	6,584	2,111			
- ditto	- ditto		Pyawbwè	4,263	1,013			
Auction	Form VIII.		Yamèthin	6,584	2,111			
- ditto	- ditto		Pyawbwè	4,263	1,013			
- ditto	- ditto							
Fixed fee	Form X.		Yamèthin	6,584	2,111			
Auction	Form XV.		Pyawbwè	4,263	1,013			
- ditto	- ditto							
Auction	Form III.	There are about 3,365 Non-Burman residents in places where shops are open.	Pyinmana	12,926	5,227	49,098	7,251	—
Fixed fee	Form III. A.							
- ditto	Form IV.							
- ditto	- ditto							
Auction	Form VIII.							
- ditto	- ditto							
- ditto	Form XV.							
- ditto	- ditto		Lèwè	1,187	138			

II.—OPIUM.

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, and Non-Burmans who are not Buddhists.	Place at which the License is or was sold.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form IV.	29,465	Mandalay	188,815	29,465	326,963	47,097	—
- ditto	- ditto		Maymyo	–	–	–	–	—
- ditto	- ditto		Mandalay	188,815	29,465	326,963	47,097	—
- ditto	- ditto							
Fixed fee	Form II.							
Auction	Form IV.	33,482	Mogaung	2,427	922	20,775	33,482	—
- ditto	- ditto		Jade Mines	–	–			
Fixed fee	Form II.		Bhamo	8,046	5,210			
- ditto	- ditto		Mogaung	2,427	922			
Auction	Form IV.	16,225	Katha	2,596	1,073	43,104	16,225	—
- ditto	- ditto		Wuntho	250	250			
- ditto	- ditto		Banmauk	–	–			
- ditto	- ditto							
Fixed fee	Form II.		Katha	2,596	1,073			
Auction	Form IV.	14,568	Mogôk	4,401	2,816	11,566	14,568	—
- ditto	- ditto	6,415	Myingyan	19,790	5,230	344,996	6,415	—
Fixed fee	Form II.							
Auction	Form IV.	18,877	Pakôkku	18,897	608	284,876	18,877	—
- ditto	- ditto	18,395	Minbu	7,270	1,417	206,080	18,395	—
- ditto	- ditto		Sinbyugyun	–	–			
- ditto	- ditto	1,191 Non-Burman residents.	Mônywa	6,316	206	231,054	1,191	—
- ditto	- ditto	21,443	Homalin	–	–	–	–	—
- ditto	- ditto	3,124 Non-Burman residents.	Yamèthin	6,584	2,111	152,271	8,351	—
- ditto	- ditto	3,365 Non-Burman residents.	Pyinmana	12,926	3,227	49,098	7,251	—

FORMS OF LIQUOR LICENSES.

Form I.

LICENSE to (construct) work (or possess) a Distillery after the English method or Brewery.

District.
No. of license in register.
Name of distiller.
In what locality.

Note.—Counterpart of this to be signed by the holder and filed in the Collector's Office.

Be it known that , resident of , is hereby authorised by the undersigned, Collector of , to (construct) work (possess) a distillery [or brewery] at in the district of until the 31st March 18 next, after which this license will cease to have effect, unless renewed for the following year.

1.—The conditions of this license are that the holder conform to the provisions of the Excise Act, 1881, and of all rules which have been, or which may from time to time be lawfully made thereunder.

2.—If the said commit any breach of the Excise Act, 1881, or of the rules lawfully made thereunder, this license may be cancelled by the Collector.

The 18 . Collector.

Form II.

LICENSE for the wholesale vend of Spirituous and Malt Liquors manufactured in a Distillery or Brewery established in Upper Burma under Section 5 of the Act.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known that resident of , is hereby authorised by the undersigned, the Collector of , to sell spirituous and malt liquors manufactured at a distillery established in Upper Burma under section 5 by wholesale in his premises, from the date of this license to the 31st March 18 , subject to the conditions stated below:—

1.—That he pay to Government, in advance for the year, a fee of R50.

2.—That he sell spirit or malt liquor only in a quantity exceeding two imperial gallons or twelve reputed quart bottles at each sale.

3.—That he do not sell any liquor whatever except that manufactured at the distillery.

4.—That he constantly exhibit at his place of vend a sign-board bearing his name, and the words, "Licensed to vend spirituous and malt liquor manufactured at the licensed distillery of by wholesale."

5.—That he do not sell liquor to any Burman.

6.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner or agent, or any other person employed in the premises for which the license is given.

The 18 . Collector.

Form III.

LICENSE for the retail vend of Spirituous Liquors manufactured at Distilleries established in Upper Burma, to be drunk on the premises or removed.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known that , resident of , is hereby authorised by the undersigned, the Collector of , to open a shop at * for the sale by retail of spirituous liquors manufactured in Upper Burma from the date of this license to the 31st March 189 .

Note.—Counterpart to be signed by the holder and filed in the Collector's Office.

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following articles:—

1.—That he pay to Govrenment in advance a sum of R , being one-quarter of the purchase money, and do pay the remaining portion on or before the following date, that is to say,—

on or before the one-quarter;
on or before the one-quarter;
on or before the one-quarter.

2.—That all liquors sold under this license be bought from a local licensed distillery, or purchased from a licensed wholesale dealer.

3.—That the holder of this license do not, under colour thereof, sell any other liquor than that for which this license is granted, or keep any other liquor in his shop.

4.—That he effect his sales of liquor only in the shop for which this license is granted.

5.—That he do not sell to one person in any one day more than two imperial gallons, or 12 quart bottles of any liquor.

6.—That he do not open his shop, or effect sales therein, before sunrise, or keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person therein during the night.

7.—That he do not receive any wearing apparel or other goods in barter for liquor.

8.—That he do not sublet his shop or transfer his license.

9.—That he do not sell any liquor to any European soldier or to any Burman.

10.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein; and that he give information to the nearest Magistrate or Police Officer of any suspected persons who may resort to his shop.

11.—That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription, both in English and Burmese:—

(Name of Vendor.)

"Licensed to sell by retail, to be drunk on the premises or removed, spirituous liquor manufactured in Upper Burma."

12.—That he at once produce his license for inspection on demand of any Excise Officer, and do not prevent any Excise Officer, of whatever grade, from entering his shop at any hour of the day or night

13.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the licensed holder, or his partner or agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 189 . Collector.

* Here enter town or village and locality therein.

Form IIIA.

LICENSE for the retail vend of Malt Liquors manufactured in a Licensed Brewery in Burma, to be drunk on the premises or removed.

District.
No. of license in register.
Name of licensed vendor.
Locality of vend.

Note.—Counterpart to be signed by the holder and filed in the Collector's Office.

Be it known that , resident of , is hereby authorised by the Collector of to open a shop at for the sale by retail of malt liquor manufactured in Burma from the date of this license to the 31st March 18 .

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following articles:—

1.—That all malt liquors sold under the license be bought from a local licensed brewery or purchased from a licensed wholesale dealer.

2.—That the holder of this license do not, under colour thereof, sell any imported malt liquors.

3.—That he effect his sales only in the shop for which the license is granted, and that he do not sell liquor in any other place or establish a second shop without another separate license.

4.—That he do not sell to one person in any one day more than two imperial gallons or twelve quart bottles of any malt liquor which he is authorised to sell.

5.—That he do not receive any wearing apparel or other goods in barter for liquor.

6.—That he do not open his shop, or effect sales therein, before sunrise, or keep it open, or effect sales therein, after 8 p m., and that he do not harbour suspicious characters therein.

7.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein; and that he give information to the nearest Magistrate or Police Officer of any suspected persons who may resort to his shop.

8.—That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription, both in English and Burmese:—

(Name of Vendor.)

"Licensed to sell by retail, to be drunk on the premises or removed, malt liquor manfactured at breweries in Burma."

9.—That he at once produce for inspection, on demand of any Excise Officer above the rank of constable, his license, and do not prevent any Excise Officer, of whatever grade, from entering his shop at any hour of the day or night.

10.—That he do not sell any liquor to any European soldier.

11.—That the shop for which this license is granted have but one door for ingress and egress.

The infringement of the above conditions will subject the license-holder to forfeiture of this license, in addition to the penalties prescribed in sections 37, 39, and 40 of Act XXII. of 1881, or any other penalties he may have incurred.

The 18 . Collector.

Form IV.

LICENSE for the wholesale vend of Foreign Spirit and Foreign Fermented Liquor.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known that , resident of , is hereby authorized by the undersigned, Collector of , to sell foreign spirit and foreign fermented liquor wholesale in his premises at till the 31st March 18 , subject to the conditions stated below :—

Note.—Counterpart to be signed by the holder and filed in the Office of the Collector.

1.—That he pay to Government, in advance for the year, a fee of R100.

2.—That he sell either foreign spirituous or fermented liquor in a quantity not less than two imperial gallons, or twelve reputed quart bottles at one time.

Illustration.—A sale at one time of an assortment consisting of two imperial gallons of both foreign spirituous and fermented liquor is not permissible A sale at one time of two imperial gallons of spirituous liquor or two imperial gallons of fermented liquor is compulsory.

3.—That he constantly exhibit a sign-board at his place of vend bearing his name and the words "Licensed to vend foreign spirit and foreign fermented liquor by wholesale."

4.—That he do not sell liquor to any European soldier or Burman.

5.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form V.

LICENSE at a Fixed Fee for the retail vend of Spirits and Fermented Liquors manufactured anywhere except in Asia in quantities of not less than one pint bottle, not to be drunk on the premises.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known to all concerned that , resident of , is hereby authorized by the undersigned, Collector of , to open a shop at , from the date of this license to the 31st March 18 , for the sale by retail of foreign spirit and fermented liquor manufactured anywhere except in Asia.

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following articles :—

1.—That he pay to Government, in advance, a fee of R500.

2.—That he do not sell any liquor manufactured in Asia.

3.—That he effect his sale of liquors only in the shop for which this license is granted, and that he do not sell liquor in any other place or establish a second shop.

4.—That he do not sell more than two imperial gallons or twelve reputed quart bottles, or less than one pint bottle of liquor, to any person at one sale.

5.—That he do not allow any liquor to be drunk in his shop or on his premises.

6.—That he did not open his shop, or effect sales therein, before sunrise, nor keep it open, or effect sales therein, after 6 p.m., and that he did not harbour any person therein during the night.

7.—That he do not receive any wearing apparel or other goods in barter for liquor.

8.—That he do not sublet his shop or transfer his license.

9.– That he do not sell any kind of liqour to any European soldier or to any Burman.

10.—That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription in English and in Burmese :—

"Licensed to sell by retail spirituous liquors manufactured anywhere except in Asia, in quantities of not less than one pint bottle, not to be drunk on the premises."

11.—That he produce his license for inspection on demand of any Excise Officer, and that he do not prevent any Excise Officer above the rank of a constable from entering his shop at any hour of the day or night.

12.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given.

The 18 . Collector.

Form VI.

LICENSE for the retail vend of Foreign Spirit and Foreign Fermented Liquor not to be drunk on the premises.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Note.- Counterpart of this will be signed by the license-holder and deposited in the Collector's Office.

Be it known to all concerned that , resident of , is hereby authorised by the undersigned, Collector of , to open a shop at in from the date of this license to the 31st March, for the sale, by retail, of foreign spirit and foreign fermented liquor, not to be drunk on the premises.

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following articles:

1.—That he pay to Government, in advance, the sum of R , being one-quarter of the purchase money, and do pay the remaining portion on or before the following dates, that is to say,—

on or before the one-quarter;
on or before the one-quarter;
on or before the one-quarter.

2.—That he sell no other liquor than that for which this license is granted.

3.—That he effect his sale of liquors only in the shop for which this license is granted, and that he do not sell liquors in any other place, or establish a second shop, without another separate license.

4.—That he do not sell more than two imperial gallons, or 12 reputed quart bottles, or less than one pint bottle, to any person at one time.

5.—That he do not allow any liquor to be drunk in his shop or on his premises.

6.—That he do not open his shop, or affect sales therein, before sunrise, nor keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person therein during the night.

7.—That he do not receive any wearing apparel or other goods in barter for liquor.

8.—That he do not sublet his shop or transfer his license.

9.—That

9.—That he do not sell any kind of liquor to any European soldier or to any Burman.

10.—That he have constantly fixed up at the entrance of his shop a sign-board bearing the following inscription in English and in Burmese :—

(Name of Vendor.)

"Licensed to sell by retail foreign spirit and foreign fermented liquor in quantities of not less than one pint bottle, not to be drunk on the premises."

11.—That he produce his license for inspection on demand of any Excise Officer, and that he do not prevent any Excise Officer from entering his shop at any hour of the day or night.

12.—This license may be cancelled by the collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form VII.

LICENSE for the retail vend of Foreign Spirit and Foreign Fermented Liquor in Public-houses, not to be removed from the premises.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known to all concerned that , resident of , is hereby authorised by the undersigned, collector of , to sell foreign spirit and foreign fermented liquor by retail at a public-house situate at from the date of this license to the 31st March 18 .

Note.—Counterpart of this to be signed by the license-holder and deposited in the Collector's Office.

It is required of , as a condition of the license remaining in force, that he duly and faithfully abide by the following conditions :—

1.—That he pay to Government, in advance, the sum of R , being one-quarter of the purchase-money, and do pay the remaining portion on or before the following dates, that is to say,—

on or before the	one-quarter ;
on or before the	one-quarter ;
on or before the	one-quarter.

2.—That he sell no other liquor than that for which this license is granted.

3.—That he sell liquor only at the public-house for which this license is granted, and that he do not permit the removal from the premises of the liquor sold.

4.—That he do not open the said public-house, or effect sales therein, before sunrise nor keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person during the night.

5.—That he do not receive any wearing-apparel or other goods in barter for liquor.

6.—That he do not sublet his shop or transfer his license.

7.—That he do not sell any kind of liquor whatever to any European soldier or to any Burman

8.—That he maintain peace and good order within the precincts of the said public-house.

9.—That he do not permit persons of notoriously bad character to resort to his public-house ; that he prevent gaming and disorderly conduct therein ; and that he give information to the nearest Magistrate or Police Officer of any suspected persons who may resort to his public-house.

10.—That the public-house for which this license is granted be kept in substantial repair, and have but one door for ingress and egress.

11.—That he have constantly fixed up at the entrance of his public-house a sign-board bearing the following inscription in English:—

(Name of Vendor or Vendors.)

"Licensed to sell by retail foreign spirit and foreign fermented liquor to be drunk on the premises only."

12.—That he produce his license for inspection on demand of any Excise Officer, and that he do not prevent any Excise Officer from entering his shop at any hour of the day or night.

13.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given, and in such cases any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

FORM VIII.

LICENSE for the retail vend of Foreign Spirit and Foreign Fermented Liquor to be drunk on the premises or removed.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Note.—Counterpart to be signed by the holder and filed in the Collector's office.

Be it known that , resident of , is hereby authorised by the undersigned, the Collector of , to open a shop at for the sale by retail of foreign spirit and foreign fermented liquors from the date of this license to the 31st March 18 .

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following articles:—

1.—That he pay to Government in advance the sum of Rs. being one-quarter of the purchase-money, and do pay the remaining portion on or before the following dates, that is to say,—

on or before the one-quarter;
on or before the one-quarter;
on or before the one-quarter.

2.—That he sell no other liquor than that for which this license is granted.

3.—That he effect his sales of liquor only in the shop for which this license is granted, and that he do not sell liquor in any other place.

4.—That he do not sell more than two imperial gallons or more than twelve reputed quart bottles to any person in one day.

5.—That he do not open his shop, or effect sales therein, before sunrise or keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person therein during the night.

6.—That he do not receive any wearing apparel or other goods in barter for liquor.

7.—That he do not sublet his shop or transfer his license.

8.—That he do not sell any liquor whatever to any European soldier or to any Burman.

9.—That he maintain peace and good order within the precincts of his shop.

10.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein, and that he give information to the nearest magistrate or police officer of any suspected persons who may resort to his shop.

11.—That

11.—That the shop for which this license is granted be kept in substantial repair, and that it have but one door for ingress and egress.

12.—That he have constantly fixed up at the entrance of his shop a sign-board bearing the following inscription both in English and Burmese :—

(Name of Vendor.)

" Licensed to sell by retail, to be drunk on the premises or removed, foreign spirit and foreign fermented liquor."

13.—That he at once produce his license for inspection on demand of any Excise Officer, and do not prevent any Excise Officer from entering his shop at any hour of the day or night.

14.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder or his partner, or his agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form IX.

License for the retail vend of Spirits and Fermented Liquor manufactured anywhere except in Asia in an Hotel, not to be removed from the premises.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known to all concerned that , resident of , is hereby authorised by the undersigned, Collector of , to sell by retail foreign spirit and foreign fermented liquor manufactured anywhere except in Asia at an hotel situate at from the date of this license to the 31st March 18 .

Note.—Counterpart of this to be signed by the license-holder and filed in the Collector's office.

It is required of , as a condition of the license remaining in force, that he duly and faithfully abide by the following conditions :—

1.—That he pay to Government in advance a fee of 100 rupees.

2.—That he sell liquor only at the hotel for which this license is granted, and only to residents in the hotel, and to *bonâ fide* travellers, and do not permit the liquor to be removed from the premises.

3.—That he sell no spirituous or fermented liquors manufactured in Asia.

4.—That he maintain peace and good order within the precincts of the said hotel.

5.—That he do not sell any kind of liquor whatever to any European soldier or to any Burman.

This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or his agent, or any other person employed in the premises for which the license is given.

The 18 . Collector.

Form X.

License for the retail vend of Spirits and Fermented Liquor, manufactured anywhere except in Asia, at the bar of an Hotel or a Refreshment-room at a Railway Station, to be drunk on the premises only.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known to all concerned that , resident of , is hereby authorised by the undersigned, Collector of , to sell foreign spirit and foreign fermented liquor by retail at

Note.—Counterpart of this to be signed by the license-holder and filed in the Collector's office.

at the bar of an hotel (or refreshment-room) situated at from the date of this license to the 31st March 18 .

It is required of , as a condition of the license remaining in force, that he duly and faithfully abide by the following articles:—

1.—That he pay to Government a fee of 500 Rs.

2.—That he sell liquor only at the bar for which the license is granted, and that he do not permit the liquor to be removed from the premises.

3.—That he do not sell liquor to any Burman.

(In the case of an hotel.)

4.—That the bar shall be within the hotel, and not opening directly on the street.

5.—That he sell no spirituous or fermented liquors manufactured in Upper Burma or in any other part of Asia.

6.—That he maintain peace and good order at the said bar.

7.—That he do not sell any kind of liquor whatever to any European soldier or to any Burman.

8.—That he produce his license for inspection on demand of any Excise Officer, and that he do not prevent any Excise Officer above the rank of a constable from entering the premises at any hour of the day or night.

9.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or his agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 Collector.

Form XI.

LICENSE to sell Imported Spirit and Imported Fermented Liquor to passengers and others on board Steamers and other Vessels employed in the inland or interport traffic of Upper Burma.

District.
No. of license in register.
Name of vendor.
Name of vessel.

Note.—Counterpart of this to be signed by the license-holder and filed in the Collector's Office.

Be it known that , for the time being of the employed in the inland (or interport) traffic of Upper Burma, is hereby authorised by the undersigned, Collector of , to sell therein by retail wines, spirits, and beer till the 31st March 18 .

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following conditions:—

1.—That he pay to Government, in advance, a fee of Rs.

2.—That he do not sell the above spirits or liquors to any persons except such as are at the time employed in, or passengers upon, the said vessel, and that he do confine their sale to the said vessel only, and do not sell for removal from the vessel.

3.—That he do not sell any liquor to any Burman.

4.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or his agent, or any other person employed in the premises for which the license is given.

The 18 . Collector.

Form XIIA.

LICENSE for the manufacture of Spirits in a Government Distillery after the Native method, and for the sale of Spirits so manufactured.

District.
Registered No.
Name.
Locality of distillery.

Be it known to all concerned that , resident of , is hereby authorised by the undersigned, Collector of , to erect a still and distil spirits in the distillery, and also to open a shop at for the sale of spirits so manufactured from the date of this license up to the 31st March 18 .

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following conditions :—

1.—That he do pay to the Government, in advance, a sum of Rs. being one-quarter of the purchase money, and do pay the remaining portion on the following dates, that is to say,—

on the one-quarter;
on the one-quarter;
on the one-quarter.

2.—That he work only still , which shall not be capable of containing gallons, or quart bottles in the boiler, and that he do not work his still before sunrise or after sunset.

3.—That he work his still only days in the , and that he give notice to the resident officer in charge of the police station of the days on which he intends to work his still.

4.—That he sell no spirits but the produce of his still.

5.—That he effect sales of spirits only in the shop for which this license is granted, and that he do not sell spirits in any other place, or establish a second shop without another separate license.

6.—That he do not sell more than quart bottle to any person in one day.

7.—That he do not open his shop, or effect sales therein, before sunrise, or keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person therein during the night.

8.—That he do not receive any wearing-apparel or other goods in barter for liquor.

9.—That he do not sub-let his shop or transfer his license.

10.—That he do not sell any kind of liquor whatever to any European soldier or to any Burman.

11.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein; and that he give information to the nearest Magistrate or Police Officer of any suspected person who may resort to the shop.

12.—That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription in Burmese :—

(Name of Vendor.)
" Licensed manufacturer and vendor of country spirits."

13.—That he do not adulterate, so as to render it noxious to health, any liquor sold by him.

 14.—That

14.—That he will at once produce his license on the demand of any Excise Officer, and that he do not prevent any Excise Officer from entering his shop at any hour of the day or night.

15.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or his agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form XIIB.

LICENSE for the Manufacture and Sale of Country Spirits to be drunk on the premises or removed.

District.
Registered No.
Name.
Locality of Shop.

Note.—Counterpart of this to be signed by the license-holder, and filed in the Collector's Office.

Be it known to all concerned that , resident of ; is hereby authorised by the undersigned, Collector of , to work a still at , in , for the manufacture of country spirits, and also to open a shop at the same place for the sale of the spirits which he may manufacture, from the date of this license to the 31st March 18 .

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following conditions:—

1.—That he do pay to the Government, in advance, a sum of Rs. being one-quarter of the purchase money, and do pay the remaining portion on the following dates, that is to say,—

on the one-quarter;
on the one-quarter;
on the one-quarter.

2.—That he work only still , which shall not be capable of containing more than gallons, or quart bottles in the boiler, and that he do not work his still before sunrise or after sunset.

3.—That he work his still only days in the , and that he give notice to the resident officer in charge of the police station of the days on which he intends to work his still.

4.—That he sell no spirits but the produce of his still.

5.—That he effect sales of spirits only in the shop for which this license is granted, and that he do not sell spirits in any other place, or establish a second shop, without another separate license.

6.—That he do not sell more than quart bottle to any person in one day.

7.—That he do not open his shop or effect sales therein, before sunrise, or keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person therein during the night.

8.—That he do not receive any wearing apparel or other goods in barter for liquor.

9.—That he do not sublet his shop or transfer his license.

10.—That he do not sell any kind of liquor whatever to any European soldier or to any Burman.

11.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein; and that he give

give information to the nearest Magistrate or Police Officer of any suspected person who may resort to the shop.

12.—That he have constantly fixed up at the entrance of his shop, a sign-board bearing the following inscription in Burmese :—

(Name of Vendor.)

"Licensed manufacturer and vendor of country spirits."

13.—That he do not adulterate, so as to render it noxious to health, any liquor sold by him.

14.—That he will at once produce his license on the demand of any Excise Officer, and that he do not prevent any Excise Officer from entering his shop at any hour of the day or night.

15.—This license may be cancelled by the Collector, if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or his agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form XIII.

LICENSE for the retail vend of Country Spirits to be drunk on the premises only.

District.
No. of license in register.
Name of vendor.
Locality of vend.

Be it known that , resident of , is hereby authorised by the undersigned, the Collector of , to open a shop at for the sale, by retail, of country spirits manufactured at the outstill at from to the .

Note.—Counterpart to be signed by the holder, and filed in the Collector's Office.

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following conditions :—

1.—That he pay to Government, in advance, a sum of R. , being one-quarter of the purchase-money, and do pay the remaining portion on or before the following dates, that is to say :—

on or before the one-quarter ;
on or before the one-quarter ;
on or before the one-quarter.

2.—That the holder of this license do not, under colour thereof, sell any other liquor than country spirits manufactured at the outstill, or keep any other liquor in his shop.

3.—That he effect his sales of liquor only in the shop for which this license is granted.

4.—That he do not sell to one person in any one day more than one quart bottle of liquor, and that he do not allow it to be removed from the premises.

5.—That he do not open his shop or effect sales therein, before sunrise, or keep it open, or effect sales therein, after 8 p.m., and that he do not harbour any person therein during the night.

6.—That he do not receive any wearing apparel or other goods in barter for liquor.

7.—That he do not sublet his shop or transfer his license.

8.—That he do not sell any liquor to any European soldier or to any Burman.

9.—That he do not permit persons of notoriously bad character to resort to his shop ; that he prevent gaming and disorderly conduct therein ; and that he

give information to the nearest Magistrate or Police Officer of any suspected person who may resort to his shop.

10.—That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription both in English and in Burmese :—

(Name of Vendor.)

"Licensed to sell by retail, to be drunk on the premises, country spirit manufactured at ."

11.—That he at once produce his license for inspection on demand of any Excise Officer, and do not prevent any Excise Officer from entering his shop at any hour of the day or night.

12.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form XIV.

LICENSE to manufacture and sell by retail Country Fermented Liquor manufactured from Rice to be drunk on or removed from the premises.

District.
Register No. of license.
Name of vendor.
Locality of shop.

Note.—Counterpart of this will be signed by the license-holder and deposited in the Collector's office.

Be it known that , resident of in the district of , is hereby authorised by the undersigned, Collector of , to open a shop for the manufacture and sale by retail of at from the date of this license to the 31st March 18 .

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following conditions :—

1.—That he pay to Government, in advance, a sum of Rs. , being one-quarter of the purchase-money, and do pay the remaining portion on the following dates, that is to say,—

on the one-quarter;
on the one-quarter;
on the one-quarter.

2.—That he sell no other liquor than that for which this license is granted and do not keep any other liquor in his shop.

3.—That he effect sales only in the shop for which this license is granted, and that he do not sell fermented liquor in any other place, or establish a second shop without a separate license.

4.—That he do not sell more than four reputed quart bottles to one person in one day.

5.—That he do not open his shop, or effect sales therein, before sunrise; that he do not keep it open, or effect sales therein, after 8 p.m.; and that he do not harbour any person therein during the night.

6.—That he do not receive any wearing-apparel or other goods in barter for liquor.

7.—That he do not sublet his shop or transfer his license.

8.—That he do not sell any kind of liquor whatever to any European soldier or to any Burman.

9.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein; and that he give information to the nearest magistrate or police officer of the resort to his shop of any suspected person.

10.—That

10.—That he do not adulterate, so as to render it noxious to health, any liquor sold by him.

11.—That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription in Burmese :—

(Name of vendor.)

"Licensed vendor of ."

12.—That he will at once produce his license on the demand of any excise officer, and that he do not prevent any excise officer from entering his shop at any hour of the day or night.

13.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form XV.

LICENSE to sell Tari or Dhaniye, or Onye by retail, to be drunk on the premises.

District.
Register No. of license.
Name of vendor.
Locality of shop or shops.
Circles from which the palm-juice is to be obtained.

Be it known that , resident of , in the district of , is hereby authorised by the undersigned, Collector of , to open shop for the sale, by retail, of tari at , from the date of this license to the 31st March 18 .

Note.—Counterpart of this will be signed by the license-holder and deposited in the Collector's office.

It is required of the holder of this license, as a condition of its remaining in force, that he duly and faithfully perform and abide by the following conditions :—

1.—That he pay to Government, in advance, the sum of Rs. , being one-quarter of the purchase money, and do pay the remaining portion on the following dates, that is to say,—

on the one-quarter;
on the one-quarter;
on the one-quarter.

2.—That he sell no other liquor than the juice of palm-trees, and that he sell only the produce of palm or date trees growing within the limits of the circles named in this license. (To be inserted only if circles are fixed.)

3.—That he effect sales only in the shop for which this license is granted, and that he do not sell tari in any other place, or establish a second shop without a separate license.

4.—That he do not sell more than four reputed quart bottles to one person in one day.

5.—That he do not open his shop, or effect sales therein, before sunrise; that he do not keep it open, or effect sales therein, after 8 p.m.; and that he do not harbour any person therein during the night.

6.—That he do not receive any wearing-apparel or other goods in barter for liquor.

7.—That he do not sublet his shop or transfer his license.

8.—That he do not sell tari to any European soldier.

9.—That he do not permit persons of notoriously bad character to resort to his shop; that he prevent gaming and disorderly conduct therein; and that he give information to the nearest magistrate or police officer of any suspected person who may resort to his shop.

10.—That he do not adulterate, so as to render it noxious to health, any liquor sold by him.

11. That he have constantly fixed up, at the entrance of his shop, a sign-board bearing the following inscription in Burmese :—

(Name of vendor.)

" Licensed vendor of tari."

12.—That he will at once produce his license on demand of any excise officer, and that he do not prevent any excise officer from entering his shop at any hour of the day or night.

13.—This license may be cancelled by the Collector if any breach of the Excise Act, or of the rules thereunder, or of the above conditions, is committed by the license-holder, or his partner, or agent, or any other person employed in the premises for which the license is given, and in such case any liquor found on the license-holder's premises may be confiscated.

The 18 . Collector.

Form XVI.

LICENSE to sell Tari to a Licensed Vendor.

Register No. of license.
Name of vendor.
Circle in which trees are situated.

Note.—Counterpart of this will be deposited in the Collector's office.

Be it known that , resident of , in the district of , is hereby authorised, by the undersigned, Collector of , to sell , the produce of his palm-trees situate at to the holder of a license to sell tari by retail at .

1.—The license-holder shall pay to Government a sum of Rs. being one anna a tree, for tree .

2.—Neither the holder of this license nor his servants shall sell the produce of his trees to any person other than the said . Breach of this condition will render the holder of this license liable to forfeit it as well as to the penalties prescribed by the Excise Act, 1881.

UPPER BURMA.

Form No. II.

LICENSE for wholesale vend of Opium granted under Rule 36.

License to sell opium* and poppy-heads is granted to subject to the undermentioned conditions and to all other provisions relating to the wholesale vend of these articles contained in the Opium Act, 1878, and in the rules published thereunder:

* "Opium" means the inspissated juice of the poppy, preparations or admixtures thereof intended for medical purposes, and *beinsè*, but does not include poppy-heads, nor *kunbón*, nor *beinchi*, nor *beinye*, nor any preparation or admixture thereof, nor any other intoxicating or narcotic preparation of opium or of the poppy.

I.—That he shall only sell opium and poppy-heads in the districts and places specified below.

II.—That he shall only sell these articles to other holders of licenses for wholesale vend, and to licensed vendors and farmers, and other persons specially licensed under Rules 34 and 35, in quantities not less than 10 seers in the case of opium, and not less than 5 seers in the case of poppy-heads.

III.—That he shall not sell these articles to Burmans.

IV.—That he shall not permit opium to be eaten, or smoked, or consumed in any way on the premises of his shop.

Districts and places in which opium, intoxicating drugs, and poppy-heads may be sold :—

This license remains in force from date of issue until the 1st April 189 , and shall be returned on expiry to the Deputy Commissioner of the district.

Dated
189 . } Deputy Commissioner.

UPPER BURMA.

Form No. IV.

LICENSE for the retail vend of Opium and Poppy-heads under Rule 39 (*i*).

District.—
No of license in register.—
Name of licensed vendor.—
Locality of shop.—

Be it known that resident of town, township, district, is hereby authorised by the Deputy Commissioner of to sell opium* and poppy-heads, by retail at in from the date of this license to the 1st day of April 189 upon the following conditions:—

*"Opium" means the inspissated juice of the poppy, preparations or admixtures thereof intended for medical purposes, and *beinsé*, but does not include poppy-heads, nor *kunbón*, nor *beinchi*, nor *beinye*, nor any preparation or admixture thereof, nor any other intoxicating or narcotic preparation of opium or of the poppy.

I.—That he will pay to Government a quarterly duty of Rs. , to be paid in advance, the first instalment on receiving this license, and subsequent instalments on or before the first day of every succeeding quarter.

II.—That he will retail opium and poppy-heads only in the shop for which this license is granted.

III. That except to a licensed vendor, a farmer, or a holder of a license for wholesale vend, or a person holding a special license from the Deputy Commissioner under Rule 18, he will not sell to one person at one time more than 10 tolas weight of opium and five seers weight of poppy-heads, or to a medical practitioner more than half a seer of opium or 10 seers of poppy-heads.

IV.—That he will not adulterate the opium sold by him.

V.—That he will not receive any wearing-apparel or other goods in barter for opium or poppy-heads.

VI.—That he will not open his shop or make sales therein before sunrise; that he will not keep it open or make sales therein after 9 p.m.; and that he will not harbour any person therein during the night.

VII.—That he will not sell opium or poppy-heads to any Burman.

VIII.—That he will not permit persons of notoriously bad character to resort to his shop; that he will prevent gaming and disorderly conduct therein; and that he will give information to the nearest magistrate or police officer of the presence of any suspected person who may resort to his shop.

IX.—That he will not permit opium to be eaten, or smoked, or consumed in any way on the premises of his shop.

X.—That he will have constantly fixed up at the entrance of his shop a sign-board, bearing the following inscription in legible characters in the vernacular language of the country:

(Name of vendor.)

"Licensed to retail opium and poppy-heads."

XI.—That he will keep up daily an account in the following form, showing the receipts and deliveries of opium at his shop each day, and the balance in store:—

Date	Quantity of Opium in Store from Yesterday.	Quantity of Poppy-Heads in Store from Yesterday.	Quantity of Opium received this Day, and whence received.	Quantity of Poppy-Heads received this Day, and whence received.	Total Quantity to be Accounted for.		Quantity Sold this Day.		Quantity left in Store.	
					Opium.	Poppy-Heads.	Opium.	Poppy-Heads.	Opium.	Poppy-Heads.

 XII.—That

XII.—That he will at once produce his license and accounts for inspection on the demand of any officer of any of the departments of Excise, Police, Customs, Salt, Opium, or Revenue, superior in rank to a peon or constable, empowered under Section 14 of the Opium Act; and that he will not prevent any such officer, of whatever rank, from entering his shop at any hour of the day or night.

XIII.—This license shall have effect from to the 1st April 189 , and, unless renewed by the order of the Financial Commissioner by the day of , on which day the period for which it was granted expires, shall cease to remain in force, notwithstanding that a special order recalling it has not been issued by the Deputy Commissioner.

XIV.—This license may be recalled by the Deputy Commissioner—

(*a*) For default of punctual payment of the duty stipulated to be paid in clause;

(*b*) For violation of any of the conditions specified in this license;

(*c*) If the holder of this license be convicted of breach of the peace, or of any other criminal offence during the currency of this license.

Should the license be recalled for any of these causes, the license-holder shall have no claim to any compensation whatever, or to any refund of any duty or instalment of duty already paid. But it shall be in the discretion of the Deputy Commissioner to make such compensation or refund should he consider it necessary or advisable to do so.

Should the Deputy Commissioner desire to recall this license before the expiry of the period for which it has been granted for any cause other than those above specified, (*a*), (*b*), and (*c*), he shall give 15 days' previous notice, and remit a sum equal to the duty for 15 days, or, if notice be not given, shall make such further compensation in default of notice as the Commissioner may direct.

XV.—This license may be surrendered by the license-holder on his giving one month's notice to the Deputy Commissioner and paying such fine, not exceeding the amount of the duty for six months, or the amount of the loss caused to Government by the failure to carry out any condition imposed, as the Deputy Commissioner may adjudge. Should the Deputy Commissioner be satisfied that the reason for resigning the license is adequate, he may, with the sanction of the Chief Revenue authority, remit the fine.

XVI.—On the infringement of any of the above articles, or of any of the conditions imposed by the Opium Act, 1878, or by the rules made thereunder, this license and any other license or licenses that the holder may have obtained for the sale of opium and poppy-heads shall be forfeited He will also be liable to the punishment prescribed by law for the specific offence co mitted.

Note.—In the case of licenses in Forms IV. and V., granted in the Bhamo and Ruby Mines districts, the following condition shall for the present be omitted, namely:—

Condition IX., of Form IV., and Condition X., of Form V. "That he will not permit opium to be eaten, or smoked, or consumed in any way on the premises of his shop."

ABSTRACT of LICENSES for 1892-93, as by the form used in Parliamentary Paper, No. 319, dated 2nd August 1888.

A.—LIQUOR LICENSES.

		Rs.
Mandalay	53 licenses paying	65,585
Bhamo	18 „ „	16,620
Katha	8 „ „	16,625
Ruby Mines	7 „ „	15,100
Shwebo	21 „ „	13,520
Ye-u	6 „ „	1,910
Sagaing	13 „ „	7,155
Lower Chindwin	5 „ „	5,400
Upper Chindwin	12 „ „	9,750
Myingyan	19 „ „	18,500
Pakokku	23 „ „	14,625
Minbu	18 „ „	9,519
Magwe	14 „ „	9,175
Kyaukse	8 „ „	4,805
Meiktila	11 „ „	7,260
Yamethin	12 „ „	5,820
Pyinmana	8 „ „	9,410
TOTAL	256 licenses paying	2,30,779

B.—OPIUM LICENSES.

Mandalay	5 licenses paying	20,020
Bhamo	4 „ „	2,920
Katha	4 „ „	4,495
Ruby Mines	1 license „	7,400
Myingyan	2 licenses „	4,020
Pakokku	1 license „	2,050
Minbu	2 licenses „	4,640
Lower Chindwin	1 license „	2,050
Upper Chindwin	1 „ „	570
Yamethin	1 „ „	3,250
Pyinmana	1 „ „	8,000
TOTAL	23 licenses paying	59,415

REVISED RETURNS of LIQUOR and OPIUM LICENSES issued during 1888–89 to 1891–92, together

I.—LIQUOR.

YEAR.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1888–89	Mandalay	1	26 Mar 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	106,033 –
,,	ditto	2	21 Mar. 1888	Retail vend of tari to be drunk on the premises	ditto	–	15,200 –
,,	ditto	3	5 April 1888	Wholesale vend of malt liquor manufactured in a brewery.	ditto	–	64 –
,,	ditto	4	3 April 1888	Retail vend of non-Asiatic liquor at the bar of an hotel.	ditto	–	200 –
,,	ditto	5	25 July 1888	ditto ditto	Nine months	–	200 –
,,	ditto	6	22 Mar. 1888	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	One year	–	10,220 –
,,	ditto	7	23 Mar. 1889	ditto ditto	ditto	–	9,500 –
,,	ditto	8	ditto	ditto ditto	ditto	–	9,300 –
,,	ditto	9	ditto	ditto ditto	ditto	–	5,318 –
,,	ditto	10	ditto	ditto ditto	ditto	–	5,017 –
,,	ditto	11	ditto	ditto ditto	ditto	–	8,500 –
,,	ditto	12	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	870 –
,,	ditto	13	ditto	ditto ditto	ditto	–	660 –
,,	ditto	14	ditto	ditto ditto	ditto	–	570 –
,,	ditto	15	24 Mar. 1889	ditto ditto	ditto	–	750 –
,,	ditto	16	23 Mar. 1889	ditto ditto	ditto	–	860 –
,,	ditto	17	24 Mar. 1889	ditto ditto	ditto	–	730 –
,,	ditto	18	23 Mar. 1889	ditto ditto	ditto	–	770 –
,,	ditto	19	24 Mar. 1889	ditto ditto	ditto	–	810 –
1889–90	ditto	1	3 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	2	ditto	ditto ditto	ditto	–	100 –
,,	ditto	3	28 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	4	6 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	5	19 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	6	21 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	7	20 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	8	21 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	9	20 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	10	ditto	ditto ditto	ditto	–	100 –
,,	ditto	11	20 Mar. 1889	ditto ditto	ditto	–	100 –
,,	ditto	12	ditto	ditto ditto	ditto	–	100 –
,,	ditto	13	ditto	ditto ditto	ditto	–	100 –
,,	ditto	14	19 Mar. 1889	To work a brewery after the English method	ditto	–	100 –
,,	ditto	15	18 Mar. 1889	Wholesale vend of malt liquor manufactured in a brewery.	ditto	–	50 –
,,	ditto	16	27 Mar. 1889	Retail vend of non-Asiatic liquor at the bar of an hotel.	ditto	–	500 –
,,	ditto	17	ditto	ditto ditto	ditto	–	500 –
,,	ditto	18	ditto	ditto ditto	ditto	–	125 –
,,	ditto	19	28 Mar. 1889	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	11,000 –
,,	ditto	20	26 Mar. 1889	ditto ditto	ditto	–	8,100 –
,,	ditto	21	27 Mar. 1889	Retail vend of foreign spirits and foreign fermented liquor in public-houses not to be removed from the premises.	ditto	–	7,800 –
,,	ditto	22	29 Mar. 1889	ditto ditto	ditto	–	7,100 –
,,	ditto	23	28 Mar. 1889	ditto ditto	ditto	–	6,000 –
,,	ditto	24	26 Mar. 1889	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	80,631 –
,,	ditto	25	25 Mar. 1889	Retail vend of tari to be drunk on the premises	ditto	–	15,320 –
1890–91	ditto	1	8 Mar. 1890	To work a distillery after the English method	ditto	–	50 –
,,	ditto	2	14 Mar. 1890	To work a brewery after the English method	ditto	–	1,000 –
,,	ditto	3	ditto	Wholesale vend of malt liquor manufactured in a brewery.	ditto	–	50 –
,,	ditto	4	20 Mar. 1890	Wholesale vend of spirituous liquor manufactured in a distillery.	ditto	–	50 –
,,	ditto	5	18 Mar. 1890	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	6	ditto	ditto ditto	ditto	–	100 –
,,	ditto	7	ditto	ditto ditto	ditto	–	100 –
,,	ditto	8	ditto	ditto ditto	ditto	–	100 –
,,	ditto	9	19 Mar. 1890	ditto ditto	ditto	–	100 –
,,	ditto	10	ditto	ditto ditto	ditto	–	100 –
,,	ditto	11	20 Mar. 1890	ditto ditto	ditto	–	100 –
,,	ditto	12	25 Mar. 1890	ditto ditto	ditto	–	100 –
,,	ditto	13	28 Mar. 1890	ditto ditto	ditto	–	100 –
,,	ditto	14	31 Mar. 1890	ditto ditto	ditto	–	100 –
,,	ditto	15	9 April 1890	ditto ditto	ditto	–	100 –
,,	ditto	16	11 April 1890	ditto ditto	ditto	–	100 –
,,	ditto	17	21 Mar. 1890	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	6,375 –
,,	ditto	18	19 Mar. 1890	ditto ditto	ditto	–	3,788 –
,,	ditto	19	21 Mar. 1890	ditto ditto	ditto	–	4,050 –
,,	ditto	20	20 Mar. 1890	Retail vend of foreign spirits and foreign fermented liquor in public-houses not to be removed from the premises.	ditto	–	2,386 –
,,	ditto	21	19 Mar. 1890	ditto ditto	ditto	–	4,150 –
,,	ditto	22	18 Mar. 1890	ditto ditto	ditto	–	2,750 –
,,	ditto	23	ditto	ditto ditto	ditto	–	3,900 –
,,	ditto	24	24 Mar. 1890	ditto ditto	ditto	–	3,950 –
,,	ditto	25	20 Mar. 1890	ditto ditto	ditto	–	3,100 –
,,	ditto	26	21 Mar. 1890	Retail vend of non-Asiatic liquor in an hotel	ditto	–	100 –
,,	ditto	27	ditto	Retail vend of non-Asiatic liquor at the bar of an hotel.	ditto	–	500 –
,,	ditto	28	25 Mar. 1890	Retail vend of tari to be drunk on the premises	ditto	–	5,550 –
,,	ditto	29	6 May 1890	ditto	ditto	–	900 –

with an Abstract in the form required by Parliamentary Paper, No. 319, dated 2nd August 1888.

I.—LIQUOR.

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction - -	Form XII. B. -							
- ditto - -	Form XV. - -							
Fixed fee - -	Form II. - -							
- ditto - -	Form X. - -							
- ditto - -	- ditto - -							
Auction - -	Form VI. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	Form IV. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
Fixed fee - -	- ditto - -	There are about 22,000 non-Burman residents in the places where shops are open.	Mandalay Town -	187,910 (including cantonments.)	29,727 (including cantonments.)	332,742	45,535	The Mandalay Brewery supplies the whole of Upper Burma.
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- dit'o - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	Form I. - -							
- ditto - -	Form II. - -							
- ditto - -	Form X. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
Auction - -	Form VI. - -							
- ditto - -	- ditto - -							
- ditto - -	Form VII. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	Form XII. B. -							
- ditto - -	Form XV. - -							
Fixed fee - -	Form I. - -							
- ditto - -	- ditto - -							
- ditto - -	Form II. - -							
- ditto - -	- ditto - -							
- ditto - -	Form IV. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -	29,465	Mandalay Town -	188,815	29,465	326,963	47,097	The Mandalay Brewery supplies the whole of Upper Burma.
Auction - -	Form VI. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	Form VII. - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
Fixed fee - -	Form IX. - -							
- ditto - -	Form X. - -							
Auction - -	Form XV. - -							
- ditto - -	- ditto - -							

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1891–92	Mandalay - -	1	30 Mar. 1890	To work a distillery after the English method -	One year -	–	100 –
,,	- ditto - -	2	31 Mar. 1890	To work a brewery after the English method -	- ditto -	–	100 –
,,	- ditto - -	3	30 Mar. 1890	Wholesale vend of spirituous liquor manufactured in a distillery.	- ditto -	–	50 –
,,	- ditto - -	4	31 Mar. 1890	Wholesale vend of malt liquor manufactured in a brewery.	- ditto -	–	50 –
,,	- ditto - -	5	25 Mar. 1890	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
,,	- ditto - -	6	24 Mar. 1890	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	7	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	8	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	9	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	10	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	11	25 Mar. 1890	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	12	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	13	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	14	30 Mar. 1890	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	15	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	16	31 Mar. 1890	- - ditto - - - ditto - - -	- ditto -	–	100 –
,,	- ditto - -	17	23 Mar. 1890	Retail vend of foreign spirits and foreign fermented liquor in quantities of not less than one pint bottle, not to be drunk on the premises.	- ditto -	–	1,000 –
,,	- ditto - -	18	23 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	1,000 –
,,	- ditto - -	19	25 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	1,000 –
,,	- ditto - -	20	30 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	1,000 –
,,	- ditto - -	21	25 Mar. 1891	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	- ditto -	–	3,200 –
,,	- ditto - -	22	24 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	4,800 –
,,	- ditto - -	23	30 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	6,500 –
,,	- ditto - -	24	25 Mar. 1891	Retail vend of foreign spirits and foreign fermented liquor in public-houses not to be removed from the premises.	- ditto -	–	3,900 –
,,	- ditto - -	25	24 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	3,450 –
,,	- ditto - -	26	25 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	3,800 –
,,	- ditto - -	27	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	5,450 –
,,	- ditto - -	28	24 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	4,150 –
,,	- ditto - -	29	31 Mar. 1891	- - ditto - - - ditto - - -	- ditto -	–	2,500 –
,,	- ditto - -	30	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	1,200 –
,,	- ditto - -	31	30 Mar. 1891	Retail vend of non-Asiatic spirits and fermented liquor in an hotel.	- ditto -	–	100 –
,,	- ditto - -	32	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	500 –
,,	- ditto - -	33	12 June 1891	- - ditto - - - ditto - - -	- ditto -	–	400 –
,,	- ditto - -	34	30 Mar. 1891	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	- ditto -	–	50 –
,,	- ditto - -	35	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	50 –
,,	- ditto - -	36	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	50 –
,,	- ditto - -	37	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	50 –
,,	- ditto - -	38	31 Mar. 1891	Retail vend of tari to be drunk on the premises -	- ditto -	–	5,600 –
,,	- ditto - -	39	- ditto -	- - ditto - - - - - - -	- ditto -	–	1,350 –
,,	- ditto - -	40	- ditto -	- - ditto - - - - - - -	- ditto -	–	410 –
1888–89	Bhamo - - -	1	2 April 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	3,200 –
,,	- ditto - -	2	3 April 1888	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	1,500 –
,,	- ditto - -	3	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	450 –
,,	- ditto - -	4	2 April 1888	Retail vend of foreign spirits and liquor not to be drunk on the premises.	- ditto -	–	3,700 –
1889–90	- ditto - -	1	4 April 1889	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	- ditto -	–	295 –
,,	- ditto - -	2	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	4,100 –
,,	- ditto - -	3	- ditto -	Retail vend of foreign spirits and foreign fermented liquor not to be removed from the premises.	- ditto -	–	600 –
,,	- ditto - -	4	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	810 –
,,	- ditto - -	5	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	395 –
,,	- ditto - -	6	- ditto -	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
1890–91	- ditto - -	1	20 Mar. 1890	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	2,500 –
,,	- ditto - -	2	9 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	1,125 –
,,	- ditto - -	3	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	6,100 –
,,	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	4,050 –
,,	- ditto - -	5	- ditto -	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
1891–92	- ditto - -	1	26 Mar. 1891	Retail vend of distillery and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	- ditto -	–	3,260 –
,,	- ditto - -	2	- ditto -	- - ditto - - - ditto - - -	- ditto -	–	720 –
,,	- ditto - -	3	31 Mar. 1891	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
,,	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	9,950 –
,,	- ditto - -	5	26 Mar. 1891	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	2,000 –

I.—Liquor—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15	16.	17.
Fixed Fee	Form I.							
ditto	ditto							
ditto	Form II.							
ditto	ditto							
ditto	Form IV.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	Form V.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
Auction	Form VI.	29,465	Mandalay town	188,815	29,465	826,963	47,097	The Mandalay Brewery supplies the whole of Upper Burma.
ditto	ditto							
ditto	ditto							
ditto	Form VII.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
ditto	ditto							
Fixed fee	Form IX.							
ditto	Form X.							
ditto	ditto							
ditto	Form III. A.							
ditto	ditto							
ditto	ditto							
ditto	ditto							
Auction	Form XV.							
ditto	ditto							
ditto	ditto							
ditto	Form XII. B.		Bhamo	5,798	5,000			
ditto	Form IV.							
ditto	Form XII. B.		Shwegu	1,203	1,000			
ditto	Form VI.							
ditto	Form III.	The Non-Burman population here is about 52,000; Burmans are few.	Bhamo	5,798	5,000	2,500	51,700, excluding the Kachin tracts.	—
ditto	Form XII. B.							
Fixed fee	Form VII.							
Auction	Form XII. B.		Shwegu	1,203	1,000			
ditto	ditto		Mogaung	2,572	2,372			
Fixed fee	Form IV.		Bhamo	5,798	5,000			
Auction	Form XII. B.		Mogaung	2,427	922			
ditto	Form III.		Shwegu	1,187	557			
ditto	ditto							
ditto	Form VIII.							
Fixed fee	Form IV.		Bhamo	8,048	5,210			
Auction	Form III.	33,482				20,775	33,482	—
ditto	ditto		Shwegu	1,187	557			
Fixed fee	Form IV.							
Auction	Form VIII.		Bhamo	8,048	5,210			
ditto	Form XII. B.		Mogaung	2,427	922			

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1891-92	Bhamo	6	26 Mar. 1891	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	100 –
„	ditto	7	ditto	ditto	ditto	–	110 –
„	ditto	8	ditto	ditto	ditto	–	760 –
„	ditto	9	ditto	Retail vend of country spirits to be drunk on the premises.	ditto	–	460 –
„	ditto	10	ditto	ditto	ditto	–	160 –
„	ditto	11	17 April 1891	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	ditto	–	50 –
„	ditto	12	22 May 1891	Retail vend of non-Asiatic liquor at the bar of an hotel.	ditto	–	500 –
„	ditto	13	10 July 1891	Wholesale vend of spirituous and malt liquors manufactured in a distillery in Burma.	Nine months	–	50 –
1888-89	Katha	1	5 May 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises.	Eleven months	–	3,780 –
„	ditto	2	26 Mar. 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	5,540 –
„	ditto	3	5 May 1888	ditto	Eleven months	–	3,200 –
1889-90	ditto	1	20 Mar. 1889	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises.	One year	–	1,240 –
„	ditto	2	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
„	ditto	3	20 Mar. 1890	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	1,000 –
„	ditto	4	ditto	ditto	ditto	–	1,510 –
„	ditto	5	ditto	ditto	ditto	–	540 –
1890-91	ditto	1	15 April 1890	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises.	Eleven months and 15 days.	–	2,500 –
„	ditto	2	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
„	ditto	3	ditto	Retail vend of spirituous liquors manufactured at distilleries in Upper Burma.	ditto	–	860 –
„	ditto	4	ditto	ditto	ditto	–	1,020 –
„	ditto	5	30 June 1890	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	Nine months	–	650 –
1891-92	ditto	1	20 Mar. 1891	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premisis or removed.	One year	–	820 –
„	ditto	2	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
„	ditto	3	ditto	Retail vend of spirituous liquors manufactured at distilleries in Upper Burma.	ditto	–	1,790 –
„	ditto	4	ditto	ditto	ditto	–	1,770 –
„	ditto	5	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	1,200 –
„	ditto	6	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	300 –
„	ditto	7	ditto	ditto	dltto	–	310 –
1888-89	Ruby Mines	1	1 April 1889	ditto	ditto	–	2,400 –
1889-90	ditto	1	ditto	ditto	ditto	–	2,400 –
„	ditto	2	28 Jan. 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	Two months and three days.	–	16 –
1890-91	ditto	1	1 April 1890	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	2,400 –
„	ditto	2	ditto	ditto	ditto	–	850 –
„	ditto	3	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
„	ditto	4	9 July 1890	Wholesale vend of malt liquor manufactured in a brewery.	Eight months and 22 days.	–	50 –
„	ditto	5	ditto	ditto	ditto	–	50 –
1891-92	ditto	1	1 April 1891	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	6,360 –
„	ditto	2	ditto	ditto	ditto	–	2,425 –
„	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	960 –
„	ditto	4	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
„	ditto	5	ditto	ditto	ditto	–	100 –
„	ditto	6	ditto	ditto	ditto	–	100 –
„	ditto	7	ditto	Wholesale vend of malt liquor manufactured in a brewery.	ditto	–	50 –
1888-89	Shwebo	1	3 April 1888	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	2,100 –
„	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	5,300 –
„	ditto	3	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,725 –
„	ditto	4	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	930 –
„	ditto	5	ditto	Retail vend of tari to be drunk on the premises	ditto	–	275 –
„	ditto	6	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	170 –
„	ditto	7	ditto	Retail vend of tari to be drunk on the premises	ditto	–	50 –
„	ditto	8	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	300 –
„	ditto	9	ditto	Retail vend of tari to be drunk on the premises	ditto	–	30 –
„	ditto	10	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	310 –

* All Shan-Burmans, no pure Burmans.
† Number of men in European and Native regiments not included.
‡ Native Infantry and Military Police not taken into account. This is a steamer-calling place.

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form XII. B.	33,482	Sikaw	160	160*	20,775	33,482	—
ditto	ditto		Lôntôn	169	169*			
ditto	ditto		Myitkyina	89	89*			
ditto	Form XIII.		Kamaing	214	214*			
ditto	ditto		Talawgyi	264	264*			
Fixed fee	Form III. A.		Bhamo	8,048	5,210			
ditto	Form X.							
ditto	Form II.							
Auction	Form VII.	The non-Burman population of the district is about 37,600.	Tigyaing	1,190	500	36,400	37,600	—
ditto	Form XII. B.		Katha	2,483	1,500			
ditto	ditto		Tigyaing	1,190	500			
ditto	Form VII.							
Fixed fee	Form IV.		Katha	2,483	1,500			
Auction	Form XII. B.							
ditto	ditto		Tigyaing	1,190	500			
ditto	ditto		Kyaukhnyat	800	50			
ditto	Form VII.	16,225				43,104	16,225	—
Fixed fee	Form IV.		Katha	2,596	1,073			
Auction	Form III.							
ditto	ditto		Tigyaing	1,190	500			
ditto	Form VI.		Kawlin	750	750			
ditto	Form VIII.							
Fixed fee	Form IV.		Katha	2,596	1,073			
Auction	Form III.							
ditto	ditto		Tigyaing	1,190	500			
ditto	Form VI.		Wuntho	850	850			
ditto	Form XII. B.		Mawlu	430	430			
ditto	ditto		Mawteik	245	245			
ditto	ditto	The non-Burman population of the district is about 19,000.	Mogôk	4,800	4,000	5,500	17,100	—
ditto	ditto		ditto	4,800	4,000		18,150	—
Fixed fee	Form IV.		Thabeitkyin	700	150			
Auction	Form XII. B.	14,568	Mogôk	4,401	2,816	11,566	14,568	—
ditto	ditto							
Fixed fee	Form IV.		Thabeitkyin	2,139	326			
ditto	Form II.		Mogôk	4,401	2,816			
ditto	ditto		Bernardmyo	703	260			
Auction	Form XII. B.		Mogôk	4,401	2,816	11,566	14,568	—
ditto	ditto		Twinngè	1,052	937			
ditto	Form VI.		Thabeitkyin	2,139	326			
Fixed fee	Form IV.		Mogôk	4,401	2,816			
ditto	ditto		Bernardmyo	703	260			
ditto	ditto		Thabeitkyin	2,139	326			
ditto	Form II.		Bernardmyo	703	260			
Auction	Form VI.	There are between 2,000 and 3,000 non-Burman residents in places where shops are open.				83,763	3,169	—
ditto	Form XII. B.		Shwebo Town	5,668	200*			
ditto	Form XV.							
ditto	Form XII. B.		Kyaukmyaung	772	20†			
ditto	Form XV.							
ditto	Form XII. B.		Thitseingyi	1,245	13‡			
ditto	Form XV.							
ditto	Form XII. B.		Sheinmaga	1,370	110§			
ditto	Form XV.							
ditto	Form XII. B.		Malè	1,175	95			

§ Chinese and Indian travellers passing through are the chief customers.
‖ Chinese and Indian travellers pass through in great numbers.

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1889–90	Shwebo	1	1 April 1888	Wholesale vend of foreign spirits and foreign fermented liquor.	One year	–	100 –
,,	ditto	2	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	3,650 –
,,	ditto	3	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	6,890 –
,,	ditto	4	ditto	ditto ditto	ditto	–	1,720 –
,,	ditto	5	ditto	Retail vend of country spirits to be drunk on the premises.	ditto	–	320 –
,,	ditto	6	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	340 –
,,	ditto	7	ditto	ditto ditto	ditto	–	700 –
,,	ditto	8	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,890 –
,,	ditto	9	ditto	ditto ditto	ditto	–	710 –
,,	ditto	10	ditto	ditto ditto	ditto	–	65 –
,,	ditto	11	1 April 1889	ditto ditto	ditto	–	135 –
,,	ditto	12	ditto	ditto ditto	ditto	–	55 –
,,	ditto	13	1 April 1890	ditto ditto	ditto	–	55 –
,,	ditto	14	ditto	ditto ditto	ditto	–	200 –
,,	ditto	15	ditto	ditto ditto	ditto	–	50 –
,,	ditto	16	ditto	ditto ditto	ditto	–	150 –
,,	ditto	17	ditto	ditto ditto	ditto	–	70 –
1890–91	ditto	1	ditto	Retail vend of spirituous and malt liquors manufactured at distilleries in Burma to be drunk on the premises or removed.	ditto	–	2,510 –
,,	ditto	2	ditto	ditto ditto	ditto	–	810 –
,,	ditto	3	ditto	ditto ditto	ditto	–	100 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	4,500 –
,,	ditto	5	ditto	Wholesale vend of foreign spirits and foreign fermented liquors.	ditto	–	100 –
,,	ditto	6	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	7	ditto	Retail vend of country spirits to be drunk on the premises.	ditto	–	1,495 –
,,	ditto	8	ditto	ditto ditto	ditto	–	
,,	ditto	9	1 April 1891	Retail vend of tari to be drunk on the premises	ditto	–	60 –
,,	ditto	10	ditto	ditto ditto	ditto	–	50 –
,,	ditto	11	ditto	ditto ditto	ditto	–	255 –
,,	ditto	12	ditto	ditto ditto	ditto	–	
,,	ditto	13	ditto	ditto ditto	ditto	–	230 –
,,	ditto	14	ditto	ditto ditto	ditto	–	
,,	ditto	15	ditto	ditto ditto	ditto	–	70 –
,,	ditto	16	1 April 1890	ditto ditto	ditto	–	
,,	ditto	17	ditto	ditto ditto	ditto	–	
,,	ditto	18	ditto	ditto ditto	ditto	–	2,210 –
,,	ditto	19	ditto	ditto ditto	ditto	–	
1891–92	ditto	1	1 April 1891	Retail vend of spirituous and malt liquor manufactured at distilleries in Burma to be drunk on the premises or removed.	ditto	–	3,300 –
,,	ditto	2	ditto	ditto ditto	ditto	–	835 –
,,	ditto	3	ditto	ditto ditto	ditto	–	155 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises.	ditto	–	4,030 –
,,	ditto	5	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	6	ditto	Retail vend of non-Asiatic liquor at the bar of an hotel.	ditto	–	500 –
,,	ditto	7	ditto	Manufacture and vend of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	8	ditto	Retail vend of country spirits to be drunk on the premises.	ditto	–	2,610 –
,,	ditto	9	ditto	ditto ditto	ditto	–	
,,	ditto	10	ditto	Retail vend of tari to be drunk on the premises	ditto	–	3,430 –
,,	ditto	11	ditto	ditto ditto	ditto	–	430 –
,,	ditto	12	ditto	ditto ditto	ditto	–	105 –
,,	ditto	13	ditto	ditto ditto	ditto	–	155 –
,,	ditto	14	ditto	ditto ditto	ditto	–	35 –
,,	ditto	15	ditto	ditto ditto	ditto	–	400 –
,,	ditto	16	ditto	ditto ditto	ditto	–	50 –
,,	ditto	17	ditto	ditto ditto	ditto	–	180 –
,,	ditto	18	ditto	ditto ditto	ditto	–	25 –
,,	ditto	19	ditto	ditto ditto	ditto	–	10 –
,,	ditto	20	ditto	ditto ditto	ditto	–	205 –
,,	ditto	21	1 June 1891	Retail vend of malt liquor manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	Year ending 31st March 1892.	–	50 –
1888–89	Ye-u	1	27 Mar. 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	650 –
,,	ditto	2	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	1,425 –
1889–90	ditto	1	1 April 1889	ditto ditto	ditto	–	450 –
,,	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	500 –
1890–91	ditto	1	1 April 1890	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	910 –
,,	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	2,010 –
,,	ditto	3	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
1891–92	ditto	1	25 Mar. 1891	ditto ditto	ditto	–	100 –
,,	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	2,100 –
,,	ditto	3	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,095 –
,,	ditto	4	9 April 1891	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	510 –

* Chinese and Indian travellers passing through are the chief customers.
† Does not include transport coolies, the number not being known.

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Fixed fee	Form IV.							
Auction	Form VI.		Shwebo	7,467	1,199			
ditto	Form XII. B.							
ditto	ditto		Kyaukmyaung	1,021	81			
ditto	Form XIII.		Myedu	2,170	930			
ditto	Form XII. B.	There are between 2,000 and 3,000 non-Burman residents in places where shops are open.	Thitseingyi	1,058	10*			
ditto	ditto		Tantabin	2,045	185	102,781	4,253	—
ditto	Form XV.		Shwebo	7,467	1,199			
ditto	ditto		Kyaukmyaung	1,021	81			
ditto	ditto		Halin	2,243	3			
ditto	ditto		Thalôn	796	–			
ditto	ditto		Sheinmaga	1,563	55			
ditto	ditto		Thitseingyi	1,058	10			
ditto	ditto		Kinu	2,904	14			
ditto	ditto		Myedu	2,170	930			
ditto	ditto		Tantabin	2,045	185			
ditto	ditto		Malè	1,713	95			
ditto	Form III.		Shwebo	9,368	2,583			
ditto	ditto		Kyaukmyaung	1,497	24†			
ditto	ditto		Thitseingyi	2,505	33			
ditto	Form VI.		Shwebo	9,368	2,583			
Fixed fee	Form IV.							
Auction	Form XII. B.		Tantabin	1,698	50‡			
	Form XIII.		Kawthandi	816	200			
	ditto		Myedu	1,459	338			
ditto	Form XV.		Thitseinygi	2,505	33			
ditto	ditto		Sheinmaga	1,635	13			
ditto	ditto		Kinu	1,674	34			
ditto	ditto		Tantabin	1,698	70			
			Myedu	1,716	338			
			Kawthandi	816	200			
ditto	ditto		Malè	2,073	36			
ditto	ditto	There are about 3,700 non-Burman residents in places where shops are open.	Shwebo	9,368	2,583			
			Kyaukmyaung	1,510	24			
			Halin	1,962	1			
			Thalôn	655	2			
ditto	Form III.		Shwebo	9,368	2,583	129,853	5,402	—
ditto	ditto		Kyaukmyaung	1,497	24			
ditto	ditto		Thitseingyi	2,505	33			
ditto	Form VI.							
Fixed fee	Form IV.		Shwebo Town	9,368	2,583			
ditto	Form X.							
Auction	Form XII. B.		Kambalu	766	350			
	Form XIII.		Tantabin	1,752	70§			
	ditto		Myedu	1,459	338			
ditto	Form XV.		Shwebo Town	9,368	2,583			
ditto	ditto		Kyaukmyaung	1,510	24			
ditto	ditto		Thitseingyi	2,505	33			
ditto	ditto		Sheinmaga	1,635	13			
ditto	ditto		Halin	1,962	1			
ditto	ditto		Kinu	1,674	34			
ditto	ditto		Tantabin	1,752	70			
ditto	ditto		Malè	2,338	36			
ditto	ditto		Myedu	1,459	338			
ditto	ditto		Kawthandi	816	200			
ditto	ditto		Nyaungbintha	963	7			
Fixed fee	Form III. A.		Shwebo Town	9,368	2,583			
Auction	Form XII. B.	The number of non-Burman residents is nearly 700.		2,874	700	90,711	1,600	—
ditto	Form VI.							
ditto	ditto							
ditto	Form XII. B.							
ditto	Form VI.		Ye-u Town	3,178	551	91,332	1,217	—
ditto	Form XII. B.	551						
Fixed fee	Form IV.							
ditto	ditto							
Auction	Form XII. B.							
ditto	Form XV.							
ditto	Form VI.							

‡ Besides a number of coolies employed in the Railway Department.
§ Exclusive of coolies of the Railway Department.

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1888–89	Sagaing	1	1 April 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	One year	–	Sold together with licenses Nos. 4, 5, and 6.
,,	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	3	ditto	Retail vend of tari to be drunk on the premises	ditto	–	
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,950 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	
,,	ditto	7	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	875 –
,,	ditto	8	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	9	ditto	Retail vend of tari to be drunk on the premises	ditto	–	
1889–90	ditto	1	1 April 1889	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	7,100 –
,,	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	3	ditto	Retail vend of tari to be drunk on the premises	ditto	–	
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,600 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	2,600 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	
,,	ditto	7	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	3,010 –
,,	ditto	8	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	
,,	ditto	9	ditto	Retail vend of tari to be drunk on the premises	ditto	–	
1890–91	ditto	1	1 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries in Upper Burma to be drunk on the premises or removed.	ditto	–	667 8
,,	ditto	2	ditto	ditto	ditto	–	65 –
,,	ditto	3	ditto	ditto	ditto	–	300 –
,,	ditto	4	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	5	ditto	Retail vend of non-Asiatic liquors in quantities of not less than one pint bottle not to be drunk on the premises.	ditto	–	500 –
,,	ditto	6	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,410 –
,,	ditto	7	ditto	ditto	ditto	–	100 –
,,	ditto	8	ditto	ditto	ditto	–	100 –
,,	ditto	9	ditto	ditto	ditto	–	150
,,	ditto	10	ditto	Retail vend of tari to be drunk on the premises	ditto	–	710 –
,,	ditto	11	ditto	ditto	ditto	–	180 –
,,	ditto	12	ditto	ditto	ditto	–	200 –
,,	ditto	13	ditto	ditto	ditto	–	350 –
1891–92	ditto	1	1 April 1891	Retail vend of spirituous and malt liquors manufactured in distilleries in Upper Burma to be drunk on the premises or removed.	ditto	–	800 –
,,	ditto	2	ditto	ditto	ditto	–	210 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	1,920 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,390 –
,,	ditto	5	ditto	ditto	ditto	–	260 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	800 –
,,	ditto	7	ditto	ditto	ditto	–	225 –
,,	ditto	8	ditto	ditto	ditto	–	370 –
,,	ditto	9	ditto	ditto	ditto	–	815 –
,,	ditto	10	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	11	ditto	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	ditto	–	50 –
,,	ditto	12	ditto	ditto	ditto	–	50 –
,,	ditto	13	ditto	Retail vend of non-Asiatic liquor to be drunk at the bar of a railway refreshment-room.	ditto	–	500 –

I.—LIQUOR—*continued.*

How was Price Fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form VIII.							
ditto	Form XII. B.		Sagaing	6,141	1,300			
ditto	Form XV.							
ditto	Form VIII.							
ditto	Form XII. B.		Myinmu	2,450	100	122,779	1,800	—
ditto	Form XV.							
ditto	Form VIII.							
ditto	Form XII. B.		Chaungu	3,385	100			
ditto	Form XV.	There are over 1,800 non-Burman residents.						
ditto	Form VIII.							
ditto	Form XII. B.		Sagaing	5,987	1,300			
ditto	Form XV.							
ditto	Form VIII.							
ditto	Form XII. B.		Myinmu	2,450	100	158,134	1,800	—
ditto	Form XV.							
ditto	Form VIII.							
ditto	Form XII. B.		Ava	1,080	100			
ditto	Form XV.							
ditto	Form III.		Sagaing	9,934	1,723			
ditto	ditto		Tada-u	1,730	50			
ditto	ditto		Myinmu	3,422	215			
Fixed fee	Form IV.							
ditto	Form V.		Sagaing	9,934	1,723			
Auction	Form VIII.							
ditto	ditto		Tada-u	1,730	50			
ditto	ditto		Myinmu	3,422	215			
ditto	ditto		Myotha	2,421	50			
			Sagaing					
			Ywathitgyi					
			Mingin					
			Sadaung					
			Tada-u					
ditto	Form XV.		Myinthi					
ditto	ditto		Myotha	—	—			
ditto	ditto		Thagyin					
			Ngazun					
			Myinmu					
			Gônyinzeik					
			Chaungu					
ditto	Form III.		Sagaing	9,934	1,723			
ditto	ditto	4,460	Myinmu	3,422	215	248,747	4,460	—
ditto	Form VI.		Sagaing	9,934	1,723			
ditto	Form VIII.		Myinmu	3,422	215			
ditto	ditto		Sagaing	9,934	1,723			
			Sagaing					
			Sagaing					
			Ywathitgyi					
			Mingin					
			Sadaung					
ditto	Form XV.		Tada-u					
ditto	ditto		Chaungwa					
ditto	ditto		Myotha	—	—			
ditto	ditto		Thagyin					
			Ngazun					
			Kyauktalôn					
			Myinmu					
			Amyin					
			Chaungu					
Fixed fee	Form IV.		Sagaing	9,934	1,723			
ditto	Form III. A.		Ywataung	1,570	170			
ditto	ditto							
ditto	Form V.		Sagaing	9,934	1,723			

I.—LIQUOR—*continued.*

YEAR.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1888–89	Lower Chindwin -	1	1 April 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	One year -	–	6,200 0*
„	- ditto - -	2	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	3	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	–	
„	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	1,020 –*
„	- ditto - -	5	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	6	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	–	
1889–90	- ditto - -	1	1 April 1889	Wholesale vend of spirituous or malt liquors manufactured in a distillery or brewery established in Upper Burma.	- ditto -	–	50 –
„	- ditto - -	2	- ditto -	Retail sale of spirituous or malt liquors manufactured in a distillery or brewery established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	100 –
„	- ditto - -	3	- ditto -	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
„	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	- ditto -	–	4,000 –
„	- ditto - -	5	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	4,750 –
„	- ditto - -	6	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	–	2,000 –
1890–91	- ditto - -	1	1 April 1890	Retail vend of distillery liquor to be drunk on the premises or removed.	- ditto -	–	660 –
„	- ditto - -	2	- ditto -	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
„	- ditto - -	3	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	3,750 –
„	- ditto - -	4	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	–	1,680 –
1891–92	- ditto - -	1	1 April 1891	Retail vend of distillery liquor to be drunk on the premises or removed.	- ditto -	–	480 –
„	- ditto - -	2	- ditto -	Retail vend of malt liquor manufactured in a brewery to be drunk on the premises or removed.	- ditto -	–	50 –
„	- ditto - -	3	- ditto -	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	–	100 –
„	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	4,020 –
„	- ditto - -	5	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	–	3,100 –
1888–89	Upper Chindwin -	1	1 April 1888	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	2	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	460 –
„	- ditto - -	3	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	4	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	5	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	1,000 –
„	- ditto - -	6	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	
1889–90	- ditto - -	1	1 April 1889	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	2	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	710 –
„	- ditto - -	3	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	4	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	5	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	630 –
„	- ditto - -	6	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	7	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	- ditto -	–	810 –
„	- ditto - -	8	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	9	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	–	810 –
„	- ditto - -	10	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	–	460 –
„	- ditto - -	11	16 Nov. 1889	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	Remainder of official year.	–	42 rupees per month.
1890–91	- ditto - -	1	1 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	One year -	–	2,230 –
„	- ditto - -	2	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	2,230 –
„	- ditto - -	3	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	- ditto -	–	
„	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	–	1,950 –

* These three Licenses were sold together.

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee?	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form VIII.		Mônywa	6,318	470	118,230	823	—
	Form XII. B.							
	Form XV.							
ditto	Form VIII.		Alôn	6,134	350			
	Form XII. B.							
	Form XV.							
Fixed fee	Form II.	There are 500 or 600 Non-Burman residents.	Mônywa	6,311	536	118,231	927	—
Auction	Form III.							
Fixed fee	Form IV.							
Auction	Form VI.							
ditto	Form XII. B.							
ditto	Form XV.							
Auction	Form III.	There are 1,191 Non-Burman residents.	Mônywa	6,316	206	231,054	1,191	—
Fixed fee	Form III. A.							
ditto	Form VI.							
Auction	Form VIII.							
ditto	Form XV.							
ditto	Form III.							
Auction	Form VIII.	About 15,000	Kindat	1,699	567			
	Form XII. B.							
ditto	Form III.							
	Form VIII.	ditto	Mingin	3,894	974			
	Form XII. B.							
ditto	Form III.							
	Form VIII.		Kindat	1,699	567			
	Form XII. B.					95,316	15,900	—
ditto	Form III.							
	Form VIII.	Population about 16000, of whom only 1,000 are Burmans.	Mingin	3,894	974			
	Form XII. B.							
ditto	Form III.							
ditto	Form VIII.		Kalewa	1,500	375			
	Form XII. B.							
ditto	Form XV.							
Fixed fee	Form VI.		Kalemyo	1,992	398			
Auction	Form III.		Kindat	1,699	567			
ditto	Form VIII.	28,443				75,785	21,443	—
ditto	Form III.		Mingin	3,894	974			
	Form VIII.							

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1890–91	Upper Chindwin -	5	1 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	One year -	-	4,010 -
,,	- ditto - -	6	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	
,,	- ditto - -	7	- ditto -	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	- ditto -	-	500 -
,,	- ditto - -	8	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	-	400 -
,,	- ditto - -	9	- ditto -	- - ditto - - ditto - - -	- ditto -	-	250 -
1891–92	- ditto - -	1	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	550 -
,,	- ditto - -	2	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	- ditto -	-	300 -
,,	- ditto - -	3	- ditto -	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	- ditto -	-	50 -
,,	- ditto - -	4	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	700 -
,,	- ditto - -	5	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	- ditto -	-	300 -
,,	- ditto - -	6	- ditto -	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	- ditto -	-	50 -
,,	- ditto - -	7	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	600 -
,,	- ditto - -	8	- ditto -	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	- ditto -	-	200 -
,,	- ditto - -	9	- ditto -	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	- ditto -	-	50 -
,,	- ditto - -	10	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	500 -
,,	- ditto - -	11	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	-	100 -
,,	- ditto - -	12	- ditto -	- - ditto - - ditto - - -	- ditto -	-	75
1888–89	Myingyan - -	1	1 April 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	1,500 -
,,	- ditto - -	2	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	3,780 -
,,	- ditto - -	3	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,800 -
,,	- ditto - -	4	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	-	10,200 -
,,	- ditto - -	5	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	3,650 -
,,	- ditto - -	6	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	570 -
,,	- ditto - -	7	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	560 -
,,	- ditto - -	8	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	-	5,000 -
,,	- ditto - -	9	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	105 -
,,	- ditto - -	10	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	50 -
,,	- ditto - -	11	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	50 -
,,	- ditto - -	12	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	560 -
,,	- ditto - -	13	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	180 -
,,	- ditto - -	14	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	210 -
1889–90	- ditto - -	1	1 April 1891	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	-	100 -
,,	- ditto - -	2	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	100 -
,,	- ditto - -	3	- ditto -	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	- ditto -	-	2,150 -
,,	- ditto - -	4	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,850 -
,,	- ditto - -	5	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,750 -
,,	- ditto - -	6	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,160 -
,,	- ditto - -	7	- ditto -	Retail vend of Non-Asiatic spirits and fermented liquors at the bar of an hotel.	- ditto -	-	500 -
,,	- ditto - -	8	- ditto -	Manufacture and sale of country spirits to be drunk on the premises or removed.	- ditto -	-	4,100 -
,,	- ditto - -	9	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	4,000 -
,,	- ditto - -	10	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,910 -
,,	- ditto - -	11	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	-	4,100 -
,,	- ditto - -	12	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	4,300 -
,,	- ditto - -	13	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	390 -
,,	- ditto - -	14	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	700 -
,,	- ditto - -	15	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	500 -
,,	- ditto - -	16	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	370 -
,,	- ditto - -	17	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	360 -
,,	- ditto - -	18	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	220 -
,,	- ditto - -	19	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	160 -
1890–91	- ditto - -	1	1 April 1890	Retail vend of spirituous and malt liquors manufactured in a distillery or brewery in Upper Burma to be drunk on the premises or removed.	- ditto -	-	2,050 -
,,	- ditto - -	2	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,025 -
,,	- ditto - -	3	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	500 -
,,	- ditto - -	4	- ditto -	Wholesale vend of foreign spirits and foreign fermented liquor.	- ditto -	-	100 -
,,	- ditto - -	5	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	100 -
,,	- ditto - -	6	- ditto -	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	- ditto -	-	2,300 -
,,	- ditto - -	7	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	2,430 -
,,	- ditto - -	8	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,620 -
,,	- ditto - -	9	- ditto -	Retail vend of Non-Asiatic liquor at a bar in an hotel.	- ditto -	-	500 -
,,	- ditto - -	10	- ditto -	Retail vend of tari to be drunk on the premises -	- ditto -	-	4,550 -
,,	- ditto - -	11	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	1,500 -
,,	- ditto - -	12	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	500 -
,,	- ditto - -	13	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	720 -
,,	- ditto - -	14	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	200 -
,,	- ditto - -	15	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	350 -
,,	- ditto - -	16	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	390 -
,,	- ditto - -	17	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	330 -
,,	- ditto - -	18	- ditto -	- - ditto - - - ditto - - -	- ditto -	-	930 -

LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee?	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15	16.	17.
Auction	Form III.		Kalewa	1,500	375			
	Form VIII.							
Fixed fee	Form VI.		Kalemyo	1,992	398			
Auction	Form XV.		Mingin	3,894	974			
- ditto	- ditto		Kalewa	1,500	375			
- ditto	Form VIII.							
- ditto	Form III.		Kindat	1,699	567			
Fixed fee	Form III. A.							
Auction	Form VIII.	21,443				75,785	21,443	--
- ditto	Form III.		Mingin	3,894	974			
Fixed fee	Form III. A.							
Auction	Form VIII.							
- ditto	Form III.		Kalewa	1,500	375			
Fixed fee	Form III. A.							
Auction	Form VIII.		Kalemyo	1,992	398			
- ditto	Form XV.		Mingin	3,894	974			
- ditto	- ditto		Kindat	1,699	567			
- ditto	Form VIII.		Myingyan	8,400	3,000			
- ditto	- ditto							
- ditto	- ditto		Pagan	4,900	1,500			
- ditto	Form XII. B.		Myingyan	8,400	3,000	95,385	6,000	--
- ditto	- ditto		Pagan	4,900	1,500			
- ditto	- ditto		Singu	441	100			
- ditto	- ditto		Salè	486	100			
- ditto	Form XV.		Myingyan	–	–	–	–	--
- ditto	- ditto		Taungtha	–	–	–	–	—
- ditto	- ditto		Natogyi	–	–	–	–	—
- ditto	- ditto		Tanaungdaing	–	–	–	–	—
- ditto	- ditto		Pagan	–	–	–	–	—
- ditto	- ditto		Singu	–	–	–	–	—
- ditto	- ditto		Salè	–	–	–	–	—
Fixed fee	Form IV.		Myingyan	9,579	3,000			
- ditto	- ditto	There are about 6,000 Non-Burman residents.	Pagan	4,998	1,500			
Auction	Form VI.		Myingyan	9,579	3,000			
- ditto	- ditto							
- ditto	- ditto		Pagan	4,498	1,500	164,518	6,000	—
Fixed fee	Form X.							
Auction	Form XII. B.		Myingyan	9,579	3,000			
- ditto	- ditto							
- ditto	- ditto		Pagan	4,498	1,500			
- ditto	Form XV.		Myingyan	–	–	–	–	—
- ditto	- ditto		Sameikôn	–	–	–	–	—
- ditto	- ditto		Pagan	–	–	–	–	—
- ditto	- ditto		Singu	–	–	–	–	—
- ditto	- ditto		Salè	–	–	–	–	—
- ditto	- ditto		Taungtha	–	–	–	–	—
- ditto	- ditto		Tanaungdaing	–	–	–	–	—
- ditto	- ditto		Natogyi	–	–	–	–	—
- ditto	Form III.		Myingyan	19,790	5,230			
- ditto	- ditto		Pagan	7,397	63			
Fixed fee	Form IV.		Myingyan	19,790	5,230			
- ditto	- ditto		Pagan	7,397	63	344,996	6,415	—
Auction	Form VIII.		Myingyan	19,790	5,230			
- ditto	- ditto	6,415	Pagan	7,397	63			
- ditto	- ditto		Myingyan	19,790	5,230			
Fixed fee	Form X.							
Auction	Form XV.		- ditto					
- ditto	- ditto		- ditto					
- ditto	- ditto		- ditto					
- ditto	- ditto		Sameikôn					
- ditto	- ditto		Pagan	–	–	–		—
- ditto	- ditto		Singu					
- ditto	- ditto		Salè					
- ditto	- ditto		Taungtha					
- ditto	- ditto		Tanaungdaing					

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1891–92	Myingyan	1	1 April 1891	Retail vend of spirituous or malt liquors manufactured in distilleries or breweries in Upper Burma to be drunk on the premises or removed.	One year	—	2,111 —
,,	ditto	2	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	—	100 —
,,	ditto	3	ditto	ditto	ditto	—	100 —
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	—	1,700 —
,,	ditto	5	ditto	ditto	ditto	—	510 —
,,	ditto	6	ditto	ditto	ditto	—	3,210 —
,,	ditto	7	ditto	ditto	ditto	—	2,750 —
,,	ditto	8	ditto	ditto	ditto	—	850 —
,,	ditto	9	ditto	Retail vend of Non-Asiatic liquor at the bar of an hotel.	ditto	—	500 —
,,	ditto	10	ditto	Retail vend of tari to be drunk on the premises	ditto	—	4,700 —
,,	ditto	11	ditto	ditto	ditto	—	2,500 —
,,	ditto	12	ditto	ditto	ditto	—	660 —
,,	ditto	13	ditto	ditto	ditto	—	750 —
,,	ditto	14	ditto	ditto	ditto	—	400 —
,,	ditto	15	ditto	ditto	ditto	—	450 —
,,	ditto	16	ditto	ditto	ditto	—	410 —
,,	ditto	17	ditto	ditto	ditto	—	616 —
,,	ditto	18	ditto	ditto	ditto	—	1,160 —
1888–89	Pakôkku	1	1 April 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	—	7,000 — for both licenses.
,,	ditto	2	ditto	ditto	ditto	—	
,,	ditto	3	ditto	ditto	ditto	—	300 —
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	—	5,250 —
,,	ditto	5	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	—	100 —
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	—	650 —
,,	ditto	7	ditto	ditto	ditto	—	80 —
1889–90	ditto	1	1 April 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	—	100 —
,,	ditto	2	ditto	ditto	ditto	—	100 —
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	—	5,100 —
,,	ditto	4	ditto	ditto	ditto	—	2,280 —
,,	ditto	5	ditto	ditto	ditto	—	460 —
,,	ditto	6	ditto	ditto	ditto	—	250 —
,,	ditto	7	ditto	Retail vend of Non-Asiatic liquor at the bar of an hotel.	ditto	—	500 —
,,	ditto	8	ditto	ditto	ditto	—	500 —
,,	ditto	9	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	—	6,700 —
,,	ditto	10	ditto	ditto	ditto	—	1,200 —
,,	ditto	11	ditto	ditto	ditto	—	500 —
,,	ditto	12	ditto	Retail vend of tari to be drunk on the premises	ditto	—	1,770 —
,,	ditto	13	ditto	ditto	ditto	—	330 —
,,	ditto	14	ditto	ditto	ditto	—	40 —
,,	ditto	15	1 April 1890	ditto	ditto	—	400 —
,,	ditto	16	ditto	ditto	ditto	—	20 —
,,	ditto	17	ditto	ditto	ditto	—	20 —
,,	ditto	18	ditto	ditto	ditto	—	20 —
,,	ditto	19	ditto	ditto	ditto	—	190 —
,,	ditto	20	ditto	ditto	ditto	—	230 —
1890–91	ditto	1	ditto	To work a distillery after the English method	Five years	—	50 rupees a year.
,,	ditto	2	ditto	Wholesale vend of spirituous liquor manufactured at a distillery in Burma.	ditto	—	ditto
,,	ditto	3	ditto	Retail vend of distillery liquor to be drunk on the premises or removed.	One year	—	2,050 —
,,	ditto	4	ditto	ditto	ditto	—	630 —
,,	ditto	5	ditto	ditto	ditto	—	520 —
,,	ditto	6	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	—	100 —
,,	ditto	7	ditto	ditto	ditto	—	100 —
,,	ditto	8	1 Oct. 1890	Retail vend of foreign spirits and foreign fermented liquor, in quantities of not less than one pint bottle, not to be drunk on the premises.	Six months	—	250 —
,,	ditto	9	1 April 1890	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	One year	—	2,500 —
,,	ditto	10	ditto	ditto	ditto	—	800 —
,,	ditto	11	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	—	5,950 —
,,	ditto	12	ditto	ditto	ditto	—	2,600 —
,,	ditto	13	ditto	ditto	ditto	—	530 —
,,	ditto	14	ditto	Retail vend of non-Asiatic liquor at the bar of an hotel.	ditto	—	100 —
,,	ditto	15	ditto	Retail vend of tari to be drunk on the premises	ditto	—	2,580 —
,,	ditto	16	ditto	ditto	ditto	—	300 —
,,	ditto	17	ditto	ditto	ditto	—	15 —
,,	ditto	18	ditto	ditto	ditto	—	1,060 —
,,	ditto	19	ditto	ditto	ditto	—	350 —
,,	ditto	20	ditto	ditto	ditto	—	420 —
,,	ditto	21	ditto	ditto	ditto	—	140 —
,,	ditto	22	ditto	ditto	ditto	—	510 —
,,	ditto	23	ditto	ditto	ditto	—	310 —
1891–92	ditto	1	1 April 1891	To work a distillery after the English method	ditto	—	50 —
,,	ditto	2	ditto	Wholesale vend of liquor manufactured at a distillery in Burma.	ditto	—	50 —
,,	ditto	3	ditto	Retail vend of liquor manufactured at a distillery in Burma.	ditto	—	1,150 —
,,	ditto	4	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	—	100 —
,,	ditto	5	ditto	ditto	ditto	—	100 —
,,	ditto	6	ditto	ditto	ditto	—	100 —
,,	ditto	7	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises.	ditto	—	4,000 —
,,	ditto	8	ditto	ditto	ditto	—	600 —

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form III.		Myingyan	19,790	5,230			
Fixed fee	Form IV.							
- ditto	- ditto		Pagan	7,397	63			
Auction	Form VI.		Myingyan	19,790	5,230	344,996	6,415	—
- ditto	- ditto		Pagan	7,397	63			
- ditto	Form VIII.		Myingyan	19,790	5,230			
- ditto	- ditto	6,415	Pagan	7,397	63			
Fixed fee	Form X.		Myingyan	19,790	5,230			
Auction	Form XV.		- ditto					
- ditto	- ditto		- ditto					
- ditto	- ditto		Sameikôn					
- ditto	- ditto		Pagan					
- ditto	- ditto		Singu	-	-	-	-	—
- ditto	- ditto		Salè					
- ditto	- ditto		Taungtha					
- ditto	- ditto		Tanaungdaing					
- ditto	- ditto		Natogyi					
Auction	Form XII. B.		Pakôkku town	18,783	2,000			
	- ditto							
- ditto	- ditto		Pauk	4,719	200			
- ditto	Form VI.		Pakôkku					
Fixed fee	Form IV.		Pakôkku town	18,783	2,000			
Auction	Form XV.		- ditto					
- ditto	- ditto		Pauk	4,719	200			
Fixed fee	Form IV.		Pakôkku town	18,783	2,000			
- ditto	- ditto		Boddagôn	200	950			
Auction	Form VI.	There are over 500 non-Burman residents in Pakôkku, besides military and camp followers.	Pakôkku	18,783	2,000			
- ditto	- ditto		Boddagôn	200	950			
- ditto	- ditto		Pauk	4,719	200	298,037	4,000	—
- ditto	- ditto		Yesagyo	3,954	60			
Fixed fee	Form X.							
- ditto	- ditto		Pakôkku	18,783	2,000			
Auction	Form XII. B.							
- ditto	- ditto		Pauk	4,719	200			
- ditto	- ditto		Yesagyo	3,954	60			
- ditto	Form XV.		Pakôkku	18,783	2,000			
- ditto	- ditto		Pauk	-	-			
- ditto	- ditto		Myaing	-	-			
- ditto	- ditto		Yesagyo	-	-			
- ditto	- ditto		Pakangyi	-	-			
- ditto	- ditto		Ma-u	-	-			
- ditto	- ditto		Lingadaw	-	-			
- ditto	- ditto		Myittha	-	-			
- ditto	- ditto		Kunywa	-	-			
Fixed fee	Form I.							
- ditto	Form II.							
Auction	Form III.		Pakôkku	18,897	608			
- ditto	- ditto							
- ditto	- ditto		Yesagyo	3,971	74			
Fixed fee	Form IV.		Pakôkku town	18,897	608			
- ditto	- ditto		Boddagôn	200	950			
- ditto	Form V.		Gangaw	6,698	900			
Auction	Form VI.		Pakôkku	18,897	608			
- ditto	- ditto		Boddagôn	200	950			
- ditto	Form VIII.		Pakôkku	18,897	607			
- ditto	- ditto		Pauk	4,927	543			
- ditto	- ditto		Yesagyo	3,971	74			
Fixed fee	Form X.	18,877	Pakôkku	18,897	608	284,876	18,877	—
Auction	Form XV.		- ditto	-	-			
- ditto	- ditto		Pauk					
- ditto	- ditto		Myaing					
- ditto	- ditto		Yesagyo					
- ditto	- ditto		Pakangyi					
- ditto	- ditto		Ma-u	-	-			
- ditto	- ditto		Lingadaw					
- ditto	- ditto		Myittha					
- ditto	- ditto		Kunywa					
Fixed fee	Form I.							
- ditto	Form II.							
Auction	Form III.		Pakôkku	18,897	608			
Fixed fee	Form IV.							
- ditto	- ditto		Boddagôn	200	950			
- ditto	- ditto		Gangaw	6,698	900			
Auction	Form VI.		Pakôkku	18,897	608			
- ditto	- ditto		Boddagôn	200	950			

I.—Liquor—*continued.*

Year.	District.	Licenses Issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License Issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs.
1891–92	Pakôkku	9	1 April 1891	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	One year	–	3,810 –
,,	ditto	10	ditto	ditto	ditto	–	2,110 –
,,	ditto	11	ditto	ditto	ditto	–	510 –
,,	ditto	12	ditto	Retail vend of non-Asiatic liquor in an hotel	ditto	–	100 –
,,	ditto	13	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,850 –
,,	ditto	14	ditto	ditto	ditto	–	780 –
,,	ditto	15	ditto	ditto	ditto	–	350 –
,,	ditto	16	ditto	ditto	ditto	–	20 –
,,	ditto	17	ditto	ditto	ditto	–	1,440 –
,,	ditto	18	ditto	ditto	ditto	–	130 –
,,	ditto	19	ditto	ditto	ditto	–	300 –
,,	ditto	20	ditto	ditto	ditto	–	45 –
,,	ditto	21	ditto	ditto	ditto	–	350 –
,,	ditto	22	ditto	ditto	ditto	–	340 –
1888–89	Minbu	1	14 July 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	Eight months and 17 days.	–	4,550 –
,,	ditto	2	31 Mar. 1888	ditto	One year	–	700 –
,,	ditto	3	ditto	ditto	ditto	–	800 –
,,	ditto	4	ditto	Retail vend of spirituous and malt liquors manufactured at distilleries in Upper Burma to be drunk on the premises or removed.	ditto	–	4,550 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	10,450 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,410 –
,,	ditto	7	ditto	ditto	ditto	–	605 –
,,	ditto	8	ditto	ditto	ditto	–	235 –
,,	ditto	9	ditto	ditto	ditto	–	70 –
,,	ditto	10	ditto	ditto	ditto	–	365 –
1889–90	ditto	1	20 Mar. 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	5,250 –
,,	ditto	3	ditto	ditto	ditto	–	1,000 –
,,	ditto	4	27 Mar. 1889	ditto	ditto	–	340 –
,,	ditto	5	14 Nov. 1889	Retail vend of non-Asiatic spirits and fermented liquor in an hotel.	Remainder of the official year 1889–90.	–	100 –
,,	ditto	6	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	7,650 –
,,	ditto	7	20 Mar. 1889	ditto	ditto	–	2,255 –
,,	ditto	8	29 Mar. 1889	ditto	ditto	–	2,110 –
,,	ditto	9	ditto	ditto	ditto	–	2,680 –
,,	ditto	10	20 Mar. 1889	Retail vend of tari to be drunk on the premises	ditto	–	2,150 –
,,	ditto	11	ditto	ditto	ditto	–	800 –
,,	ditto	12	ditto	ditto	ditto	–	1,685 –
,,	ditto	13	ditto	ditto	ditto	–	120 –
,,	ditto	14	27 Mar. 1889	ditto	ditto	–	1,580 –
,,	ditto	15	ditto	ditto	ditto	–	1,150 –
,,	ditto	16	ditto	ditto	ditto	–	660 –
,,	ditto	17	ditto	ditto	ditto	–	300 –
,,	ditto	18	ditto	ditto	ditto	–	660 –
,,	ditto	19	ditto	ditto	ditto	–	330 –
,,	ditto	20	ditto	ditto	ditto	–	80 –
1890–91	ditto	1	4 April 1890	Wholesale vend of foreign spirits and and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	15 Mar. 1890	Retail vend of non-Asiatic spirits and fermented liquor in an hotel.	ditto	–	100 –
,,	ditto	3	4 April 1890	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	3,550 –
,,	ditto	4	ditto	ditto	ditto	–	220 –
,,	ditto	5	21 Mar. 1890	ditto	ditto	–	710 –
,,	ditto	6	ditto	ditto	ditto	–	1,500 –
,,	ditto	7	4 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries in Upper Burma.	ditto	–	450 –
,,	ditto	8	21 Mar. 1890	ditto	ditto	–	2,700 –
,,	ditto	9	15 Mar. 1890	Retail vend of tari to be drunk on the premises	ditto	–	1,020 –
,,	ditto	10	ditto	ditto	ditto	–	465 –
,,	ditto	11	14 April 1890	ditto	ditto	–	915 –
,,	ditto	12	15 Mar. 1890	ditto	ditto	–	410 –
,,	ditto	13	21 Mar. 1890	ditto	ditto	–	730 –
,,	ditto	14	ditto	ditto	ditto	–	800 –
,,	ditto	15	ditto	ditto	ditto	–	280 –
,,	ditto	16	ditto	ditto	ditto	–	200 –
,,	ditto	17	18 Mar. 1890	ditto	ditto	–	850 –
,,	ditto	18	ditto	ditto	ditto	–	510 –
,,	ditto	19	ditto	ditto	ditto	–	75 –
1891–92	ditto	1	1 May 1891	Retail vend of malt liquors manufactured in a brewery in Upper Burma to be drunk on the premises or removed.	ditto	–	50 –
,,	ditto	2	18 Feb. 1891	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	3	17 Mar. 1891	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,700 –
,,	ditto	4	ditto	ditto	ditto	–	300 –
,,	ditto	5	ditto	ditto	ditto	–	1,100 –
,,	ditto	6	22 Mar. 1891	ditto	ditto	–	910 –
,,	ditto	7	17 Mar. 1891	Retail vend of tari to be drunk on the premises	ditto	–	1,010 –
,,	ditto	8	ditto	ditto	ditto	–	1,500 –
,,	ditto	9	ditto	ditto	ditto	–	400 –
,,	ditto	10	ditto	ditto	ditto	–	65 –
,,	ditto	11	19 Mar. 1891	ditto	ditto	–	521 –
,,	ditto	12	ditto	ditto	ditto	–	204 –
,,	ditto	13	ditto	ditto	ditto	–	50 –
,,	ditto	14	23 Mar. 1891	ditto	ditto	–	1,350 –
,,	ditto	15	ditto	ditto	ditto	–	1,500 –
,,	ditto	16	ditto	ditto	ditto	–	360 –
,,	ditto	17	ditto	ditto	ditto	–	250 –

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form VIII.		Pakôkku	18,897	608			
ditto	ditto		Pauk	4,927	543			
ditto	ditto		Gangaw	6,698	900			
ditto	Form IX.		Pakôkku	18,897	608			
ditto	Form XV.		ditto					
ditto	ditto	18,877	Pauk			284,876	18,877	—
ditto	ditto		Myaing					
ditto	ditto		Yesagyo					
ditto	ditto		Pakangyi					
ditto	ditto		Ma-u	—	—			
ditto	ditto		Lingadaw					
ditto	ditto		Myittha					
ditto	ditto		Kunywa					
ditto	ditto		Myintha					
ditto	Form VIII.		Minbu	7,234	327			
ditto	ditto		Salin	10,221	124			
ditto	ditto	There are about 600 non-Burman residents in places where shops are open besides military police.	Sinbyugyun	8,548	180			
ditto	Form III.		Minbu	7,234	327			
ditto	Form XII. B.		ditto	7,234	327			
ditto	Form XV.							
ditto	ditto		Salin	10,221	124			
ditto	ditto		Sinbyugyun	8,548	180			
ditto	ditto		Legaing	3,037	2			
ditto	ditto		Sagu	7,849	60			
Fixed fee	Form IV.		Minbu	7,234	327			
Auction	Form VI.							
ditto	ditto		Sagu	7,849	60	216,009	8,348 Including 7,610 Chins.	—
ditto	ditto		Salin	10,221	124			
Fixed fee	Form IX.							
			Minbu	7,234	327			
Auction	Form XII. B.							
ditto	ditto	The non-Burman population of the district is about 19,000.	Sagu	7,849	60			
ditto	ditto		Salin	10,221	124			
ditto	ditto		Sinbyugyun					
ditto	Form XV.		Minbu					
ditto	ditto		Taukshabin					
ditto	ditto		Sagu					
ditto	ditto		Ngapè					
ditto	ditto		Salin	8,548	180			
ditto	ditto		Sinbyugyun					
ditto	ditto		Sun village					
ditto	ditto		Zigat village					
ditto	ditto		Legaing					
ditto	ditto		Pyilôngyan					
ditto	ditto		Sidôktaya					
Fixed fee	Form IV.							
ditto	Form IX.		Minbu	7,270	1,417			
Auction	Form VI.							
ditto	ditto		Sagu	7,479	90			
ditto	ditto		Salin	10,345	200			
ditto	ditto		Sinbyugyun	9,669	149			
ditto	Form III.		Minbu	7,270	1,417			
ditto	ditto		Sinbyugyun	8,548	180			
ditto	Form XV.		Minbu					
ditto	ditto		Taukshabin					
ditto	ditto		Sagu					
ditto	ditto		Ngapè					
ditto	ditto		Salin					
ditto	ditto		Sinbyugyun	7,270	1,417			
ditto	ditto		Sun village					
ditto	ditto		Zigat village					
ditto	ditto		Legaing					
ditto	ditto		Pwynbyu					
ditto	ditto	18,395	Sidôktaya			206,080	18,395	
Fixed fee	Form III. A.							
ditto	Form IV.		Minbu	7,270	1,417			
Auction	Form VIII.							
ditto	ditto		Sagu	7,479	90			
ditto	ditto		Salin	10,345	200			
ditto	ditto		Sinbyugyun					
ditto	Form XV.		Minbu					
ditto	ditto		Sagu					
ditto	ditto		Taukshabin					
ditto	ditto		Ngapè					
ditto	ditto		Legaing	9,669	149			
ditto	ditto		Pwynbyu					
ditto	ditto		Sidôktaya					
ditto	ditto		Salin					
ditto	ditto		Sinbyugyun					
ditto	ditto		Sun village					
ditto	ditto		Zigat village					

I.—Liquor—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1888–89	Magwe	1	16 Mar. 1888	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	One year	–	1,820 –
,,	ditto	2	Sept. 1888	ditto	Six months	–	1,100 –
,,	ditto	3	26 Mar. 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	2,680 –
,,	ditto	4	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,700 –
,,	ditto	5	ditto	ditto	ditto	–	260 –
,,	ditto	6	ditto	ditto	ditto	–	155 –
1889–90	ditto	1	1 April 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor not to be drunk on the premises.	ditto	–	1,950 –
,,	ditto	4	ditto	ditto	ditto	–	300 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	3,700 –
,,	ditto	6	ditto	ditto	ditto	–	1,000 –
,,	ditto	7	ditto	ditto	ditto	–	800 –
,,	ditto	8	ditto	Retail vend of tari to be drunk on the premises	ditto	–	4,350 –
,,	ditto	9	ditto	ditto	ditto	–	330 –
,,	ditto	10	ditto	ditto	ditto	–	1,000 –
,,	ditto	11	ditto	ditto	ditto	–	1,400 –
,,	ditto	12	ditto	ditto	ditto	–	400 –
,,	ditto	13	ditto	ditto	ditto	–	100 –
,,	ditto	14	ditto	ditto	ditto	–	1,000 –
1890–91	ditto	1	1 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries established in Burma to be drunk on the premises or removed.	ditto	–	1,050 –
,,	ditto	2	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	3	ditto	ditto	ditto	–	100 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,300 –
,,	ditto	5	ditto	ditto	ditto	–	1,080 –
,,	ditto	6	ditto	Manufacture and retail sale of country spirits to be drunk on the premises or removed.	ditto	–	2,300 –
,,	ditto	7	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,350 –
,,	ditto	8	ditto	ditto	ditto	–	1,600 –
,,	ditto	9	ditto	ditto	ditto	–	1,400 –
,,	ditto	10	ditto	ditto	ditto	–	630 –
,,	ditto	11	ditto	ditto	ditto	–	300 –
,,	ditto	12	ditto	ditto	ditto	–	200 –
,,	ditto	13	ditto	ditto	ditto	–	140 –
,,	ditto	14	ditto	ditto	ditto	–	120 –
,,	ditto	15	ditto	ditto	ditto	–	250 –
1891–92	ditto	1	1 April 1891	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,100 –
,,	ditto	2	ditto	ditto	ditto	–	700 –
,,	ditto	3	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	2,200 –
,,	ditto	4	ditto	Retail vend of tari to be drunk on the premises	ditto	–	2,800 –
,,	ditto	5	ditto	ditto	ditto	–	170 –
,,	ditto	6	ditto	ditto	ditto	–	550 –
,,	ditto	7	ditto	ditto	ditto	–	230 –
,,	ditto	8	ditto	ditto	ditto	–	280 –
,,	ditto	9	ditto	ditto	ditto	–	250 –
,,	ditto	10	ditto	ditto	ditto	–	1,300 –
,,	ditto	11	ditto	ditto	ditto	–	520 –
,,	ditto	12	ditto	ditto	ditto	–	700 –
,,	ditto	13	ditto	ditto	ditto	–	3,100 –
1888–89	Kyaukse	1	26 Mar. 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	4,600 –*
,,	ditto	2	ditto	Retail vend of tari to be drunk on the premises	ditto	–	580 –
,,	ditto	3	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	5,800 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	940 –
1889–90	ditto	1	25 Mar. 1889	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	6,100 –
,,	ditto	2	25 April 1889	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,150 –
,,	ditto	3	1 April 1889	ditto	ditto	–	650 –
,,	ditto	4	4 April 1889	Retail vend of tari to be drunk on the premises	ditto	–	500 –
,,	ditto	5	19 Oct. 1889	Retail vend of non-Asiatic spirits to be drunk in a refreshment-room at a railway station.	ditto	–	250 –
1890–91	ditto	1	17 Mar. 1890	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	250 –
,,	ditto	2	ditto	ditto	ditto	–	540 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,500 –
,,	ditto	4	ditto	Retail vend of tari to be drunk on the premises	ditto	–	330 –
,,	ditto	5	ditto	ditto	ditto	–	75 –
,,	ditto	6	22 Mar. 1890	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	300 –
,,	ditto	7	31 Mar. 1890	Retail vend of non-Asiatic spirits to be drunk in a refreshment-room at a railway station.	ditto	–	250 –
1891–92	ditto	1	20 Mar. 1891	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,130 –
,,	ditto	2	ditto	Sale of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	410 –
,,	ditto	3	ditto	Retail vend of tari to be drunk on the premises	ditto	–	820 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	312 –
,,	ditto	5	ditto	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	100 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	102 –
,,	ditto	7	ditto	Retail vend of non-Asiatic liquor to be drunk in a refreshment-room at a railway station.	ditto	–	260 –

* This license was re-sold in June 1891 for 1,800 rupees only.

I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction	Form VI.		Taungdwingyi	8,000	500			
ditto	ditto		Magwe	5,000	400			
ditto	Form XII. B.		Taungdwingyi	8,000	500	150,000	3,000	—
ditto	Form XV.		ditto	8,000	500			
ditto	ditto		Myingun	4,000	70			
ditto	ditto		Magwe	5,000	400			
Fixed fee	Form IV.		ditto	6,000	1,000			
ditto	ditto	There are over 1,000 non-Burman residents in places with shops.	Yenangyaung	3,000	185			
Auction	Form VI.		Magwe	6,000	1,000			
ditto	ditto		Taungewingyi	6,000	460			
ditto	Form XII. B.		Magwe	6,000	1,000			
ditto	ditto		Yenangyaung	3,000	185			
ditto	ditto		Taungdwingyi	6,000	460	180,000	2,500	—
ditto	Form XV.		Magwe	6,000	1,000			
ditto	ditto		Yenangyaung	3,000	185			
ditto	ditto		Myingun	5,000	140			
ditto	ditto		Taungdwingyi	6,000	460			
ditto	ditto		Kokkôgwa	1,100	60			
ditto	ditto		Ngamin	1,200	70			
ditto	ditto		Satthwa	1,500	87			
ditto	Form III.		Magwe	6,647	800			
Fixed fee	Form IV.		ditto	6,647	800			
ditto	ditto		Taungdwingyi	5,687	459			
Auction	Form VIII.		Magwe	6,647	800			
ditto	ditto		Taungdwingyi	5,687	458			
ditto	Form XII. B.							
ditto	Form XV.		Magwe	6,647	800			
ditto	ditto		Taungdwingyi	5,687	459			
ditto	ditto		Yenangyaung	4,317	250			
ditto	ditto		Myothit	1,000	70			
ditto	ditto		Satthwa	1,500	40			
ditto	ditto		Natmauk	1,500	40			
ditto	ditto	2,549	Ywathit	1,000	160	216,641	2,549	—
ditto	ditto		Shwebandaw	4,000	40			
ditto	ditto		Gyôkkôn	2,814	30			
ditto	Form VIII.		Magwe	7,000	900			
ditto	ditto		Taungdwingyi	5,687	459			
ditto	Form XII. B.							
ditto	Form XV.		Yenangyaung	4,500	300			
ditto	ditto		Gyôkkôn	2,814	30			
ditto	ditto		Myingun	5,000	150			
ditto	ditto		Migyaungye	1,000	20			
ditto	ditto		Natmauk	1,500	40			
ditto	ditto		Shwebandaw	4,000	40			
ditto	ditto		Taungdwingyi	5,687	459			
ditto	ditto		Satthwa	1,500	40			
ditto	ditto		Myothit	1,000	60			
ditto	ditto		Migwe	7,000	900			
ditto	Form VIII.		Kyauksè	6,000	700			
			Paleik	2,000	250			
ditto	Form XV.		Kyauksè	6,000	700			
ditto	Form XII. B.		Paleik	2,000	250			
ditto	Form VIII.	There are estimated to be about 1,200 non-Burman residents in the places where shops are open in this district.	Kyauksè	6,000	700			
ditto	Form XII. B.		Myittha	1,500	450	78,822	2,878	—
ditto	Form VIII.							
ditto	ditto		Myittha	1,500	450			
ditto	Form XV.		Kyauksè	6,000	700			
Fixed fee	Form X.		Myittha	1,500	450			
			Thabyedaung	430	30			
Auction	Form III.		Myittha	1,500	33			
ditto	ditto		Kyauksè	6,000	700			
ditto	Form VIII.		Kyauksè	6,000	1,000			
ditto	Form XV.		Myittha	1,500	33			
ditto	ditto							
ditto	Form VIII.							
Fixed fee	Form X.	There are 1,062 non-Burman residents in the places where shops are open in this district.	Thabyedaung	351	29			
Auction	Form VIII.					119,374	7,248	—
ditto	Form III.		Kyauksè	6,413	1,000			
ditto	Form XV.							
ditto	Form VIII.							
ditto	Form III.		Myittha	1,647	33			
ditto	Form XV.							
Fixed fee	Form X.		Thabyedaung	351	29			

I.—Liquor—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. *a.*
1888–89	Meiktila	1	1 April 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	Nine months	–	1,500 –
,,	ditto	2	10 Jan. 1889	ditto ditto	Three months	–	1,100 –
,,	ditto	3	1 April 1888	ditto ditto	Nine months	–	3,075 –
,,	ditto	4	10 Jan. 1889	ditto ditto	Three months	–	1,170 –
,,	ditto	5	3 July 1888	Manufacture and sale of country spirits to be drunk on the premises or removed.	One year	–	7,600 –
,,	ditto	6	1 April 1888	ditto ditto	ditto	–	1,900 –
,,	ditto	7	ditto	ditto ditto	Two months	–	637 8
,,	ditto	8	1 July 1888	ditto ditto	Ten months	–	2,150 –
,,	ditto	9	1 April 1888	Retail vend of tari to be drunk on the premises	One year	–	1,000 –
,,	ditto	10	ditto	ditto ditto	ditto	–	810 –
,,	ditto	11	ditto	ditto ditto	ditto	–	500 –
1889–90	ditto	1	1 April 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	3,100 –
,,	ditto	4	ditto	ditto ditto	ditto	–	3,000 –
,,	ditto	5	ditto	Retail vend of Non-Asiatic liquor to be drunk at the bar of an hotel or of a refreshment room of a railway station.	ditto	–	500 –
,,	ditto	6	30 Mar. 1889	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	7,600 –
,,	ditto	7	ditto	ditto ditto	ditto	–	1,200 –
,,	ditto	8	21 Mar. 1889	ditto ditto	ditto	–	2,250 –
,,	ditto	9	1 April 1889	Retail vend of tari to be drunk on the premises	ditto	–	2,550 –
,,	ditto	10	6 May 1889	ditto ditto	ditto	–	1,000 –
,,	ditto	11	1 April 1889	ditto ditto	ditto	–	550 –
1890–91	ditto	1	17 April 1890	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	520 –
,,	ditto	2	1 April 1890	ditto ditto	ditto	–	410 –
,,	ditto	3	ditto	Wholesale vend of foreign spirits and foreign fermented liquors.	ditto	–	100 –
,,	ditto	4	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,150 –
,,	ditto	5	ditto	ditto ditto	ditto	–	2,000 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	700 –
,,	ditto	7	ditto	ditto ditto	ditto	–	270 –
,,	ditto	8	ditto	ditto ditto	ditto	–	160 –
1891–92	ditto	1	2 May 1891	Retail vend of malt liquor manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	Eleven months	–	50 –
,,	ditto	2	1 April 1891	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	One year	–	1,650 –
,,	ditto	3	ditto	ditto ditto	ditto	–	500 –
,,	ditto	4	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	5	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,700 –
,,	ditto	6	ditto	ditto ditto	ditto	–	2,100 –
,,	ditto	7	ditto	Retail vend of tari to be drunk on the premises	ditto	–	590 –
,,	ditto	8	ditto	ditto ditto	ditto	–	320 –
,,	ditto	9	ditto	ditto ditto	ditto	–	315 –
1888–89	Yamèthin	1	4 April 1888	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	4,600 –
,,	ditto	2	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	8,100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	9,050 –
,,	ditto	4	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	9,250 –
,,	ditto	5	ditto	Retail vend of tari to be drunk on the premises	ditto	–	3,410 –
,,	ditto	6	ditto	ditto ditto	ditto	–	1,925 –
,,	ditto	7	ditto	Retail vend of Non-Asiatic liquor to be drunk at the bar of an hotel or of a refreshment room at a railway station.	Three months	–	62 8
1889–90	ditto	1	5 April 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	One year	–	100 –
,,	ditto	2	ditto	ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail sale of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	3,050 –
,,	ditto	4	ditto	ditto ditto	ditto	–	2,610 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	4,100 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	2,400 –
,,	ditto	7	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	8	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,250 –
,,	ditto	9	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	3,000 –
,,	ditto	10	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,400 –
,,	ditto	11	ditto	Retail vend of Non-Asiatic liquor at the bar of an hotel or of a refreshment room at a railway station.	ditto	–	250 –

- - - - - - - - I.—LIQUOR—*continued.*

How was Price fixed? By Auction Sale, or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Auction - -	Form VIII. - -							
- ditto - -	- ditto - -		Meiktila town -	4,685	841			
- ditto - -	- ditto - -							
- ditto - -	- ditto - -							
- ditto - -	Form XII. B. -							
- ditto - -	- ditto - -		Mahlaing - -	3,141	130			
- ditto - -	- ditto - -		Wundwin - -	2,500	90			
- ditto - -	- ditto - -		Thedaw - -	410	20			
- ditto - -	Form XV. - -							
- ditto - -	- ditto - -		Meiktila - -	4,685	841			
- ditto - -	- ditto - -	There are about 1,800 Non Burman residents in the places where shops are open in this district.	Mahlaing - -	3,141	130			
Fixed fee - -	Form IV. - -							
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -		Meiktila - -	4,685	841	205,055	1,739	-
- ditto - -	- ditto - -							
Fixed fee - -	Form X. - -		Cantonment, Meiktila.	675	600			
Auction - -	Form XII. B. -		Meiktila - -	4,685	841			
- ditto - -	- ditto - -		Mahlaing - -	3,141	130			
- ditto - -	- ditto - -		Thazi - - -	211	55			
- ditto - -	Form XV. - -		Meiktila - -	4,685	841			
- ditto - -	- ditto - -		Mahlaing - -	3,141	130			
- ditto - -	- ditto - -		Meiktila road station.	211	55			
- ditto - -	Form III. - -		Meiktila - -	3,983	1,034	-	-	—
- ditto - -	- ditto - -		Thazi - - -	211	55			
Fixed fee - -	Form IV. - -							
Auction - -	Form VIII. - -		Meiktila town -					
- ditto - -	- ditto - -			3,983	1,034			
- ditto - -	Form XV. - -							
- ditto - -	- ditto - -		Kywelèbin - -					
- ditto - -	- ditto - -	There are about 1,097 Non-Burman residents in the places where shops are open in this district.	Pyintha - -	180	3			
Fixed fee - -	Form III. A. -							
Auction - -	Form III. - -		Meiktila - -	3,983	1,034	202,880	3,770	—
- ditto - -	- ditto - -		Thazi - - -	211	55			
Fixed fee - -	Form IV. - -							
Auction - -	Form VIII. - -		Meiktila - -	3,983	1,034			
- ditto - -	- ditto - -							
- ditto - -	Form XV. - -							
- ditto - -	- ditto - -		Thazi - - -	-	55			
- ditto - -	- ditto - -		Mahlaing - -	2,005	5			
- ditto - -	Form VIII. - -							
			Pyawbwè - -	3,850	350			
- ditto - -	Form XII. B. -							
- ditto - -	Form VIII. - -							
			Yamèthin - -	5,500	500	128,196	2,308	—
- ditto - -	Form XII. B. -							
- ditto - -	Form XV. - -							
- ditto - -	- ditto - -		Pyawbwè - -	3,850	350			
Fixed fee - -	Form X. - -		Yamèthin - -	5,500	500			
- ditto - -	Form IV. - -	There are about 1,500 Non-Burman residents in the places where shops are open in this district.						
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -							
			Yamèthin - -	5,865	450			
- ditto - -	- ditto - -							
- ditto - -	Form XII. B. -							
- ditto - -	Form XV. - -							
Fixed fee - -	Form IV. - -							
Auction - -	Form VIII - -					160,672	1,379	—
			Pyawbwè - -	3,700	300			
- ditto - -	Form XII. B. -							
- ditto - -	Form XV. - -							
Fixed fee - -	Form X. - -		Yamèthin - -	5,865	450			

I.—Liquor—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, Manufacture, or both Sale and Manufacture, and of what kind or kinds of Liquor.	For what Period each License issued?	Area covered by each License.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
							Rs. a.
1890–91	Yamèthin	1	1 April 1890	Wholesale vend of foreign spirits and foreign fermented liquor.	One year	–	100 –
,,	ditto	2	ditto	ditto ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,650 –
,,	ditto	4	ditto	ditto ditto ditto	ditto	–	1,650 –
,,	ditto	5	ditto	Retail vend of spirituous and malt liquor manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	950 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,850
,,	ditto	7	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	8	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	500 –
,,	ditto	9	ditto	Retail vend of spirituous and malt liquor manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	550 –
,,	ditto	10	ditto	Retail vend of tari to be drunk on the premises	ditto	–	500 –
,,	ditto	11	ditto	Retail vend of non-Asiatic liquor at the bar of an hotel or of a refreshment room at a railway station.	ditto	–	250 –
1891–92	ditto	1	1 April 1891	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	ditto ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	1,500 –
,,	ditto	4	ditto	ditto ditto ditto	ditto	–	1,300 –
,,	ditto	5	ditto	Retail vend of spirituous and malt liquor manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	850 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,850 –
,,	ditto	7	ditto	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	8	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	450 –
,,	ditto	9	ditto	Retail vend of spirituous and malt liquor manufactured at distilleries or breweries established in Upper Burma to be drunk on the premises or removed.	ditto	–	300 –
,,	ditto	10	ditto	Retail vend of tari to be drunk on the premises	ditto	–	450 –
,,	ditto	11	ditto	Retail vend of non-Asiatic liquor at the bar of an hotel or of a refreshment room at a railway station.	ditto	–	250 –
,,	ditto	12	11 April 1891	Retail vend of malt liquors manufactured in a licensed brewery in Burma to be drunk on the premises or removed.	ditto	–	50 –
1888–89	Pyinmana	1	1 April 1888	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	210 –
,,	ditto	2	ditto	ditto ditto ditto	ditto	–	270 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	5,100 –
,,	ditto	4	ditto	ditto ditto ditto	ditto	–	6,200 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	8,950 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	3,600 –
,,	ditto	7	ditto	ditto ditto ditto	ditto	–	460 –
1889–90	ditto	1	1 April 1889	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	ditto ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	6,700 –
,,	ditto	4	ditto	ditto ditto ditto	ditto	–	7,800 –
,,	ditto	5	ditto	Manufacture and sale of country spirits to be drunk on the premises or removed.	ditto	–	5,000 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	2,600 –
,,	ditto	7	ditto	ditto ditto ditto	ditto	–	375 –
1890–91	ditto	1	1 April 1890	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	ditto ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	3,600 –
,,	ditto	4	ditto	ditto ditto ditto	ditto	–	3,400 –
,,	ditto	5	ditto	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	ditto	–	1,950 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	1,800 –
,,	ditto	7	ditto	ditto ditto ditto	ditto	–	100 –
1891–92	ditto	1	1 April 1891	Wholesale vend of foreign spirits and foreign fermented liquor.	ditto	–	100 –
,,	ditto	2	ditto	ditto ditto ditto	ditto	–	100 –
,,	ditto	3	ditto	Retail vend of foreign spirits and foreign fermented liquor to be drunk on the premises or removed.	ditto	–	2,800 –
,,	ditto	4	ditto	ditto ditto ditto	ditto	–	2,600 –
,,	ditto	5	ditto	Retail vend of spirituous and malt liquors manufactured at distilleries or breweries in Upper Burma to be drunk on the premises or removed.	ditto	–	1,300 –
,,	ditto	6	ditto	Retail vend of tari to be drunk on the premises	ditto	–	100 –

I.—Liquor—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
Fixed fee - -	Form IV. - -							
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -							
- ditto - -	- ditto - -		Yamèthin - -	6,584	2,111			
- ditto - -	Form III. - -							
- ditto - -	Form XV. - -							
Fixed fee - -	Form IV. - -							
Auction - -	Form VIII. - -							
- ditto - -	Form III. - -		Pyawbwè - -	3,397	1,013			
- ditto - -	Form XV. - -							
Fixed fee - -	Form X. - -	There are about 3,124 non-Burman residents in the places where shops are open in this district.				152,271	8,351	—
- ditto - -	Form IV. - -							
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -		Yamèthin - -	6,584	2,111			
- ditto - -	- ditto - -							
- ditto - -	Form III. - -							
- ditto - -	Form XV. - -							
Fixed fee - -	Form IV. - -							
Auction - -	Form VIII. - -							
- ditto - -	Form III. - -		Pyawbwè - -	4,263	1,013			
- ditto - -	Form XV. - -							
Fixed fee - -	Form X. - -							
- ditto - -	Form III. A. -		Yamèthin - -	6,584	2,111			
- ditto - -	Form IV. - -							
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -							
- ditto - -	- ditto - -		Pyinmana - -	12,025	1,000			
- ditto - -	Form XII. B. -							
- ditto - -	Form XV. - -	There are about 1,000 non-Burman residents in the places where shops are open.						
- ditto - -	- ditto - -		Lèwè - - -	1,000	250	43,433	12,500	—
Fixed fee - -	Form IV. - -							
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -		Pyinmana - -	12,025	1,000			
- ditto - -	- ditto - -							
- ditto - -	Form XII. B. -							
- ditto - -	Form XV. - -							
- ditto - -	- ditto - -		Lèwè - - -	1,000	250			
Fixed fee - -	Form IV. - -							
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -							
- ditto - -	- ditto - -		Pyinmana - -	12,926	3,227			
- ditto - -	Form III. - -							
- ditto - -	Form XV. - -	There are about 3,365 non-Burman residents in the places where shops are open.						
- ditto - -	- ditto - -		Lèwè - - -	1,187	138			
Fixed fee - -	Form IV. - -					49,098	7,251	—
- ditto - -	- ditto - -							
Auction - -	Form VIII. - -		Pyinmana - -	12,926	3,227			
- ditto - -	- ditto - -							
- ditto - -	Form III. - -							
- ditto - -	Form XV. - -		Lèwè - - -	1,187	138			

II.—OPIUM.

YEAR.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, and what kind of Opium.	For what Period each License issued?	Area covered by each License, *i.e.*, Area of District.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
				MANDALAY DISTRICT.			*Rs.*
1888-89	Mandalay	1	8 November	Sale by retail of opium	Five months		500
,,	- ditto	2	- ditto	- - ditto	- ditto		500
,,	- ditto	3	- ditto	- - ditto	- ditto		500
,,	- ditto	4	13 November	Sale by wholesale of opium	One year		20
,,	- ditto	5	- ditto	- - ditto	- ditto		20
,,	- ditto	6	12 November	- - ditto	- ditto		20
,,	- ditto	7	- ditto	- - ditto	- ditto		20
,,	- ditto	8	- ditto	- - ditto	- ditto		20
,,	- ditto	9	- ditto	- - ditto	- ditto		20
,,	- ditto	10	- ditto	- - ditto	- ditto		20
,,	- ditto	11	- ditto	- - ditto	- ditto		20
,,	- ditto	12	14 November	- - ditto	- ditto	2,100 square miles.	20
,,	- ditto	13	13 November	- - ditto	- ditto		20
,,	- ditto	14	15 November	- - ditto	- ditto		20
1889-90	- ditto	1	26 March	Sale by retail of opium	- ditto		45,300
,,	- ditto	2	22 November	Sale by wholesale of opium	- ditto		20
,,	- ditto	3	- ditto	- - ditto	- ditto		20
,,	- ditto	4	- ditto	- - ditto	- ditto		20
1890-91	- ditto	1	31 March	Sale by retail of opium	- ditto		29,150
,,	- ditto	2	-	Sale by wholesale of opium	- ditto		20
,,	- ditto	3	-	- - ditto	- ditto		20
,,	- ditto	4	-	- - ditto	- ditto		20
1891-92	—	—	—	*	—	—	—
				BHAMO DISTRICT.			
1888-89	Bhamo	1	4 April	Sale by retail of opium at Mogaung	One year		200
,,	- ditto	2	- ditto	Sale by wholesale of opium at Bhamo	- ditto		20
,,	- ditto	3	- ditto	- - ditto	- ditto		20
,,	- ditto	4	- ditto	- - ditto	- ditto		20
,,	- ditto	5	- ditto	- - ditto	- ditto		20
,,	- ditto	6	- ditto	- - ditto	- ditto		20
,,	- ditto	7	- ditto	- - ditto	- ditto		20
,,	- ditto	8	- ditto	- - ditto	- ditto		20
,,	- ditto	9	- ditto	- - ditto	- ditto		20
,,	- ditto	10	- ditto	- - ditto	- ditto		20
,,	- ditto	11	- ditto	- - ditto	- ditto		20
,,	- ditto	12	- ditto	- - ditto	- ditto		20
,,	- ditto	13	- ditto	- - ditto	- ditto		20
,,	- ditto	14	- ditto	- - ditto	- ditto		20
,,	- ditto	15	- ditto	- - ditto	- ditto		20
,,	- ditto	16	- ditto	- - ditto	- ditto		20
,,	- ditto	17	- ditto	- - ditto	- ditto		20
,,	- ditto	18	- ditto	- - ditto	- ditto		20
,,	- ditto	19	- ditto	- - ditto	- ditto		20
,,	- ditto	20	- ditto	- - ditto	- ditto		20
,,	- ditto	21	- ditto	- - ditto	- ditto		20
,,	- ditto	22	- ditto	- - ditto	- ditto	About 9,800 square miles.	20
,,	- ditto	23	- ditto	- - ditto	- ditto		20
,,	- ditto	24	- ditto	- - ditto	- ditto		20
,,	- ditto	25	- ditto	- - ditto	- ditto		20
,,	- ditto	26	- ditto	- - ditto	- ditto		20
,,	- ditto	27	- ditto	- - ditto	- ditto		20
,,	- ditto	28	- ditto	- - ditto	- ditto		20
,,	- ditto	29	-	- - ditto	- ditto		20
1889-90	- ditto	1	4 April	Retail vend of opium and poppy-heads at Mogaung.	- ditto		415
,,	- ditto	2	5 April	Retail vend of opium and poppy-heads at Bhamo	- ditto		1,800
1890-91	- ditto	1	20 March	Retail vend of opium and poppy-heads at Mogaung.	- ditto		1,000
,,	- ditto	2	- ditto	Retail vend of opium and poppy-heads at Bhamo	- ditto		7,000
,,	- ditto	3	-	Wholesale vend of opium at Bhamo	- ditto		20
,,	- ditto	4	-	- - ditto	- ditto		20
1891-92	- ditto	1	2 May	Retail vend of opium and poppy-heads at Bhamo	Eleven months		5,150
,,	- ditto	2	26 March	Retail vend of opium and poppy-heads at Mogaung.	One year		1,150
,,	- ditto	3	18 February	Wholesale vend of opium at Bhamo	-		20
,,	- ditto	4	10 May	Wholesale vend of opium at Mogaung	-		20
				KATHA DISTRICT.			
1888-89	Katha	1	28 November	Retail vend of opium	Four months		300
1889-90	- ditto	1	20 March	- - ditto	One year	6,000 square miles.	2,100
,,	- ditto	2	- ditto	Wholesale vend of opium	- ditto		20
1890-91	- ditto	1	15 April	Retail vend of opium	- ditto		3,650
,,	- ditto	2	- ditto	Wholesale vend of opium	- ditto		20
1891-92	- ditto	-	-	License withdrawn under Financial Commissioner's orders.	—	—	—
				RUBY MINES DISTRICT.			
1888-89	Ruby Mines	1	1 January	Retail vend of opium	Three months		400
1889-90	- ditto	1	1 May	- - ditto	Eleven months	2,000 square miles.	825
1890-91	- ditto	1	1 April	Retail vend of opium at Mogôk	One year		960
,,	- ditto	2	- ditto	Retail vend of opium at Twinngè	- ditto		400
1891-92	- ditto	1	9 June	Retail vend of opium	Nine months		§ 292
				SHWEBO DISTRICT.			
1888-89	Shwebo						
1889-90	- ditto						
1890-91	- ditto			Nil.	—	—	—
1891-92	- ditto						
				YE-U DISTRICT.			
1888-89	Ye-u						
1889-90	- ditto						
1890-91	- ditto			Nil.	—	—	—
1891-92	- ditto						

* Not sold, owing to combination among Chinese dealers. † Excluding Wuntho. ‡ Including Wuntho.
§ With a duty of 15 rupees per viss on a minimum of 15 viss imported per month.

II.—OPIUM.

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15	16.	17.
Auction	Form III.							
At fixed fee	Form II.	Non-Burman population about 22,000.	Mandalay Town	187,910	29,727	332,742	45,535	—
Auction	Form III.							
At fixed fee	Form II.							
Auction	Form III.	29,465	ditto	188,815	29,465	326,963	47,097	—
At fixed fee	Form II.							
—	—	—	—	—	—	—	—	—
Auction	Form III.	There are probably less than 2,000 Burman Buddhists out of a total population of 54,000 for the whole district.	Mogaung	2,572	2,372	2,500	55,700	—
At fixed fee	Form II.		Bhamo	5,798	5,000			
Auction	Form III.		Mogaung	2,572	2,372			
			Bhamo	5,798	5,000			
Auction	Form III.	33,482	Mogaung	2,427	922	20,775	33,482	—
			Bhamo	8,048	5,210			
Fixed fee	Form II.		Mogaung	2,427	922			
			Bhamo	8,048	5,210			
Auction	Form III.		Mogaung	2,427	922			
			Bhamo	8,048	5,210			
Fixed fee	Form II.		Mogaung	2,427	922			
Auction	Form III.	About 37,600	Katha	2,483	1,500	† 36,400	† 37,600	—
Fixed fee	Form II.							
Auction	Form III.	16,225		2,596	1,073	‡ 43,104	‡ 16,225	—
Fixed fee	Form II.							
—	—	—	—	—	—	—	—	—
Auction	Form III.	About 19,000	Mogôk	4,800	4,000	5,000	17,100	—
			ditto	4,401	2,816			
		14,568	Twinngè	1,052	937	11,566	14,568	—
	Form III.		Mogôk	4,401	2,816			
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—

II.—Opium—*continued.*

Year.	District.	Licenses issued in Serial Number.	Date of Issue of each License.	For what purpose? Sale, and what kind of Opium.	For what Period each License issued?	Area covered by each License, *i.e.*, Area of District.	Price paid for each License.
1.	2.	3.	4.	5.	6.	7.	8.
				SAGAING DISTRICT.			*Rs.*
1888–89	Sagaing						
1889–90	ditto						
1890–91	ditto			Nil.	—	—	—
1891–92	ditto						
				LOWER CHINDWIN DISTRICT.			
1888–89	Lower Chindwin			Nil.	—	—	—
1889–90	ditto	1	1 April	Retail vend of opium	One year	3,400 square miles.	3,630
1890–91	ditto	1	ditto	ditto	ditto		3,050
1891–92	ditto	1	ditto	ditto	ditto		2,360
				UPPER CHINDWIN DISTRICT.			
1888–89	Upper Chindwin			Nil.	—	—	—
1889–90	ditto			Nil.	—	—	—
1890–91	ditto			Nil.	—	—	—
1891–92	ditto	1	1 April	Retail vend of opium and poppy-heads	One year	19,000 square miles.	490
				MYINGYAN DISTRICT.			
1888–89	Myingyan	1	1 November	Retail vend of opium and poppy-heads	Five months	3,737 square miles.	2,250
,,	ditto	2	ditto	Wholesale vend of opium and poppy-heads	ditto		20
1889–90	ditto	1	1 April	Retail vend of opium and poppy-heads	Three and a-half months.		3,468
,,	ditto	2	ditto	Wholesale vend of opium and poppy-heads	ditto		20
1890–91	ditto	1	ditto	Retail vend of opium and poppy-heads	One year		6,700
,,	ditto	2	ditto	Wholesale vend of opium and poppy-heads	ditto		20
1891–92	ditto	1	ditto	Retail vend of opium and poppy-heads	ditto		5,000
,,	ditto	2	ditto	Wholesale vend of opium and poppy-heads	ditto		20
				PAKOKKU DISTRICT.			
1888–89	Pakôkku	1	1 April	Retail vend of opium	One year	6,160 square miles.	500
,,	ditto	2	ditto	Wholesale vend of opium	ditto		20
1889–90	ditto	1	ditto	Retail vend of opium	ditto		2,750
,,	ditto	2	ditto	ditto	ditto		320
1890–91	ditto	1	ditto	ditto	ditto		5,630
1891–92	ditto	1	ditto	ditto	ditto		2,760
				MINBU DISTRICT.			
1888–89	Minbu	1	10 October	Retail vend of opium at Minbu	Five and a-half months.	3,210 square miles.	670
,,	ditto	2	ditto	Wholesale vend of opium at Minbu	ditto		20
1889–90	ditto	1	20 March	Retail vend of opium at Minbu	One year		6,950
,,	ditto	2	6 April	Retail vend of opium at Sinbyugyun	ditto		9,000
,,	ditto	3	20 March	Wholesale vend of opium at Minbu	ditto		20
1890–91	ditto	1	15 March	Retail vend of opium at Minbu	ditto		10,650
,,	ditto	2	ditto	Retail vend of opium at Sinbyugyun	ditto		5,980
,,	ditto	3	ditto	Wholesale vend of opium at Minbu	ditto		20
,,	ditto	4	ditto	Wholesale vend of opium at Sinbyugyun	ditto		20
1891–92	ditto	1	17 March	Retail vend of opium at Minbu	ditto		5,800
,,	ditto	2		Retail vend of opium at Sinbyugyun	ditto		3,150
				MAGWE DISTRICT.			
—	Magwe			Nil.	—	—	—
				KYAUKSE DISTRICT.			
1888–89	Kyauksè			Nil.	—	—	—
1889–90	ditto	1	25 April	Retail vend of opium	Eleven months	1,050 square miles.	400
1890–91	ditto	1	17 March	ditto	One year		4,820
1891–92	ditto	1	20 March	ditto	ditto		2,015
				MEIKTILA DISTRICT.			
1888–89	Meiktila						
1889–90	ditto						
1890–91	ditto			Nil.	—	—	-
1891–92	ditto						
				YAMETHIN DISTRICT.			
1888–89	Yamèthin	1	10 October	Retail vend of opium	Six months	3,000 square miles.	2,350
1889–90	ditto	1	4 April	ditto	One year		5,000
1890–91	ditto	1	1 April	ditto	ditto		1,950
1891–92	ditto	1	ditto	ditto	ditto		2,100
				PYINMANA DISTRICT.			
1888–89	Pyinmana	1	10 October	Retail vend of opium	Six months	6,000 square miles.	8,600
1889–90	ditto	1	1 April	ditto	One year		15,000
1890–91	ditto	1	ditto	ditto	ditto		10,100
1891–92	ditto	1	ditto	ditto	ditto		11,000

* Shans, Kachins, and Natives of India.

II.—Opium—*continued.*

How was Price fixed? By Auction Sale or by Tender, or at Fixed Fee.	Conditions of License.	Estimated Number of Chinese, Shans, Non-Burman Buddhists, Non-Burmans who are not Buddhists.	Place at which the License is or was held.	Total Population of the Place.	Number of Non-Burmans in the Town or Village.	Total Burman Population of the District.	Total Non-Burman Population.	Total Burman and Non-Burman Population of the whole Area supplied.
9.	10.	11.	12.	13.	14.	15.	16.	17.
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
Auction	Form III.	Between 500 and 600 in Mônywa Town beside Chins, &c., on the frontier.	Mônywa	6,311	536	118,231	927	—
ditto	ditto	1,191	ditto	6,316	206	231,054	1,191	—
ditto			ditto	6,316	206			
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
Auction	Form III.	About 15,000	Paunglyin	16,000	*15,000	54,342	21,443	—
Auction	Form III.			8,400	3,000	95,385	6,000	—
Fixed fee	Form II.			8,400	3,000			
Auction	Form III.	6,000	Myingyan	9,579	3,000	164,518	6,000	—
Fixed fee	Form II.			9,579	3,000			
Auction	Form III.			19,790	5,230			
Fixed fee	Form II.	6,415	Myingyan	19,790	5,230	344,996	6,415	—
Auction	Form III.			19,790	5,230			
Fixed fee	Form II.			19,790	5,230			
Auction	Form III.	500, besides Chins on frontier and military and camp followers.	Pakôkku	20,783	2,000	298,037	4,000	—
Fixed fee	Form II.							
Auction	Form III.							
ditto	ditto		Pauk	4,919	200			
ditto	ditto	543						
ditto	ditto			4,927	543	284,876	18,877	—
Auction	Form III.	600, besides military police.	Minbu	7,234	327	216,009	8,348 including 7,610 Chins.	—
Fixed fee	Form II.							
Auction	Form III.							
ditto	ditto		Sinbyugyun	8,548	180			
Fixed fee	Form II.		Minbu	7,234	327			
Auction	Form III.	18,395	Sinbyugyun	7,270	1,417	206,080	18,395	—
ditto	ditto			9,669	149			
Fixed fee	Form II.		Minbu	7,270	1,417			
ditto	ditto		Sinbyugyun	9,669	149			
Auction	Form III.		Minbu	7,270	1,417			
ditto	ditto		Sinbyugyun	9,669	149			
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
Auction	Form III.	1,200	Kyauksè	6,000	700	78,822	2,878	—
		7,248		6,413	1,000	119,374	7,248	—
				6,413	1,000			
—	—	—	—	—	—	—	—	—
Auction	Form III.	1,500						
		8,551				152,271	8,351	—
Auction	Form III.	1,000	Pyinmana	12,025	1,000	43,443	12,500	—
		3,227		12,926	3,227	49,098	7,251	—

W. F. Noyce,
Secretary to Financial Commissione

Abstract of Licenses for 1888–89 to 1891–92 as by the form used in Parliamentary Paper No. 319, dated 2nd August 1888.

A.—Liquor Licenses.

				Rs.	a.	p.
Mandalay	19	Licenses in	1888-89 paying	1,75,672	–	–
	25	„	1889-90 „	1,38,526	–	–
	29	„	1890-91 „	43,849	–	–
	40	„	1891-92 „	53,010	–	–
Bhamo	4	„	1888-89 „	8,850	–	–
	6	„	1889-90 „	6,300	–	–
	5	„	1890-91 „	13,875	–	–
	13	„	1891-92 „	18,220	–	–
Katha	3	„	1888-89 „	12,520	–	–
	5	„	1889-90 „	4,390	–	–
	5	„	1890-91 „	5,130	–	–
	7	„	1891-92 „	6,290	–	–
Ruby Mines	1	„	1888-89 „	2,400	–	–
	2	„	1889-90 „	2,416	–	–
	5	„	1890-91 „	3,450	–	–
	7	„	1891-92 „	10,095	–	–
Shwebo	10	„	1888-89 „	11,190	–	–
	17	„	1889-90 „	17,100	–	–
	19	„	1890-91 „	12,390	–	–
	21	„	1891-92 „	16,605	–	–
Ye-u	2	„	1888-89 „	2,075	–	–
	2	„	1889-20 „	950	–	–
	3	„	1890-91 „	3,020	–	–
	4	„	1891-92 „	3,805	–	–
Sagaing	9	„	1888-89 „	2,825	–	–
	9	„	1889-90 „	15,310	–	–
	13	„	1890-91 „	5,832	8	–
	13	„	1891-92 „	8,490	–	–
Lower Chindwin	6	„	1888-89 „	7,220	–	–
	6	„	1889-90 „	11,000	–	–
	4	„	1890-91 „	6,190	–	–
	5	„	1891-92 „	7,750	–	–
Upper Chindwin	6	„	1888-89 „	1,460	–	–
	11	„	1889-90 „	3,630	–	–
	9	„	1890-91 „	11,570	–	–
	12	„	1891-92 „	3,475	–	–
Myingyan	14	„	1888-89 „	28,215	–	–
	19	„	1889-90 „	28,720	–	–
	18	„	1890-91 „	20,095	–	–
	18	„	1891-92 „	23,471	–	–
Pakôkku	7	„	1888-89 „	13,380	–	–
	20	„	1889-90 „	20,710	–	–
	23	„	1890-91 „	21,915	–	–
	22	„	1891-92 „	18,285	–	–
Minbu	10	„	1888-89 „	23,735	–	–
	20	„	1889-90 „	31,600	–	–
	19	„	1890-91 „	15,585	–	–
	17	„	1891-92 „	12,370	–	–
Magwô	6	„	1888-89 „	7,715	–	–
	14	„	1889-90 „	16,530	–	–
	15	„	1890-91 „	12,940	–	–
	13	„	1891-92 „	13,600	–	–
Kyaukśé	4	„	1888-89 „	11,920	–	–
	5	„	1889-90 „	9,650	–	–
	7	„	1890-91 „	3,245	–	–
	7	„	1891-92 „	3,124	–	–
Meiktila	11	„	1888-89 „	21,442	8	–
	11	„	1889-90 „	21,950	–	–
	8	„	1890-91 „	6,310	–	–
	9	„	1891-92 „	7,325	–	–
Yamethin	7	„	1888-89 „	36,397	8	–
	11	„	1889-90 „	18,360	–	–
	11	„	1890-91 „	8,200	–	–
	12	„	1891-92 „	7,300	–	–
Pyinmana	7	„	1888-89 „	24,790	–	–
	7	„	1889-90 „	22,675	–	–
	7	„	1890-91 „	11,050	–	–
	6	„	1891-92 „	7,000	–	–
Total Number of Licenses	126	„	1888-89 „	3,91,707	–	–
	190	„	1889-90 „	3,69,817	–	–
	200	„	1890-91 „	2,04,646	8	–
	226	„	1891-92 „	2,20,215	–	–

ABSTRACT of Licenses for 1888–89 to 1891–92 as by the form, &c.—*continued.*

B.—OPIUM LICENSES.

					Rs.	a.	p.
Mandalay	14	Licenses in	1888-89	paying	1,720	–	–
	4	„	1889-90	„	45,360	–	–
	4	„	1890-91	„	29,210	–	–
Bhamo	29	„	1888-89	„	760	–	–
	2	„	1889-90	„	2,215	–	–
	4	„	1890-91	„	8,040	–	–
	4	„	1891-92	„	6,340	–	–
Katha	1	„	1888-89	„	300	–	
	2	„	1889-90	„	2,125	–	–
	2	„	1890-91	„	3,670	–	–
Ruby Mines	1	„	1888-89	„	400	–	–
	1	„	1889-90	„	825	–	–
	2	„	1890-91	„	1,360	–	–
	1	„	1891-92	„	292	–	–
Lower Chindwin	1	„	1889-90	„	3,630	–	–
	1	„	1890-91	„	3,050	–	–
	1	„	1891-92	„	2,360	–	–
Upper Chindwin	1	„	1891-92	„	490	–	–
Myingyan	2	„	1888-89	„	2,270	–	–
	2	„	1889-90	„	3,488	–	–
	2	„	1890-91	„	6,720	–	–
	2	„	1891-92	„	5,020	–	–
Pakôkku	2	„	1888-89	„	520	–	–
	2	„	1889-90	„	3,070	–	–
	1	„	1890-91	„	5,630	–	–
	1	„	1891-92	„	2,760	–	–
Minbu	2	„	1888-89	„	690	–	–
	3	„	1889-90	„	15,970	–	–
	4	„	1890-91	„	16,670	–	–
	2	„	1891-92	„	8,950	–	–
Kyauksé	1	„	1889-90	„	400	–	–
	1	„	1890-91	„	4,820	–	–
	1	„	1891-92	„	2,015	–	
Yamêthin	1	„	1888-89	„	2,350	–	–
	1	„	1889-90	„	5,000	–	–
	1	„	1890-91	„	1,950	–	
	1	„	1891-92	„	2,100	–	
Pyinmana	1	„	1888-89	„	8,600	–	–
	1	„	1889-90	„	15,000	–	–
	1	„	1890-91	„	10,100	–	–
	1	„	1891-92	„	11,000	–	–
TOTAL number of Licenses	53	„	1888-89	„	17,610	–	–
	20	„	1889-90	„	97,083	–	–
	23	„	1890-91	„	91,220	–	–
	15	„	1891-92	„	41,327	–	–

EAST INDIA (OPIUM AND INTOXICATING LIQUORS LICENSES) (UPPER BURMA).

FURTHER RETURNS of LICENSES for the Sale of OPI and INTOXICATING LIQUORS issued in *Upper Burma* si 1 January 1888, showing the Number of such Licen issued; the Times at which, the Districts for whi and the Periods for which they have been issu the Prices paid for them respectively; and the C ditions or Regulations subject to which they h been issued (in continuation of Parliamentary Pa No. 22, of Session 1892).

(*Mr. Bryce.*)

Ordered, by The House of Commons, *to be Printed*, 29 *March* 1893.

[*Price* 6 *d.*]

149. *Under* 6 *oz*

EAST INDIA (CONSUMPTION OF GANJA).

RETURN to an Address of the Honourable The House of Commons, dated 21 February 1893;—*for*,

"COPIES of the following PAPERS relating to the CONSUMPTION of GANJA and other Drugs in *India*; (1.) DESPATCH from the Secretary of State for India to the Government of India, No. 59 (Revenue), dated the 6th day of August 1891; (2.) LETTER from the Government of India, No. 212 (Finance and Commerce), dated the 9th day of August 1892, with Enclosures; (3.) DESPATCH from the Secretary of State for India to the Government of India, No. 99 (Revenue), dated the 20th day of October 1892; (4.) REPORT on Cultivation of, and Trade in Ganja in Bengal by Mr. Hem Chunder Kerr; and (5.) ARTICLE on Hemp or *Cannabis Sativa*, by Dr. Watt, C.I.E., Reporter on Economic Products with the Government of India, published in the Second Volume of the 'Dictionary of Economic Products of India.'"

India Office,
2 March 1893.

ARTHUR GODLEY,
Under Secretary of State for India.

(*Mr. Caine.*)

Ordered, by The House of Commons, *to be Printed*,
3 *March* 1893.

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— No. 1. —

Consumption of Ganja in India.

Despatch from Secretary of State for India to the Governor General of India in Council; dated 6th August 1891.

(Revenue—No. 59.)

My Lord Marquis,

I FORWARD for the information of your Excellency's Government, copy of a question and answer in the House of Commons concerning the consumption of ganja in India. I shall be glad to learn your views as to the effects of this drug on the consumers thereof, and also whether you propose to take any further steps for restricting the consumption.

I have, &c.
(signed) *Cross.*

Enclosure in No. 1.

House of Commons Question.—16th July 1891.

Mr. Mark Stewart,—To ask the Under Secretary of State for India whether his attention has been called to the statement in the "Allahabad Pioneer" of the 10th May last, that ganja, "which is grown, sold, and excised under much the same conditions as opium," is far more harmful than opium, and that "the lunatic asylums of India are filled with ganja smokers":

(2.) Whether he is aware that the possession and sale of ganja has been prohibited for many years past in Lower Burma, and that the exclusion of the drug was stated in the excise report of that province for 1881–82 to have been "of immense benefit to the people":

(3.) And whether he will call the attention of the Government of India to the desirability of extending the same prohibition to the other provinces of British India.

Reply.

(1.) The Secretary of State has seen the statement mentioned in the question.

(2.) Yes, Sir.

(3.) In Bengal, the province where ganja is principally consumed, the price of duty-paid ganja has been greatly increased during recent years, making its consumption more expensive. The Secretary of State will inquire whether the Government of India will propose to take further steps to limit the consumption.

— No. 2. —

LETTER from the Government of India, Finance and Commerce Department (Separate Revenue—Excise), to the Secretary of State for India, No. 212; dated the 9th August 1892.

My Lord,

WE have the honour to acknowledge the receipt of your Lordship's Despatch, No. 59 Revenue, dated the 6th August 1891, forwarding a copy of a question and answer in the House of Commons concerning the consumption of ganja in India, and asking for an expression of our views as to the effects of this drug upon the consumers thereof. Your Lordship also inquires whether we propose to take any further steps for restricting its consumption.

2. The whole question now raised was, as will be seen from the enclosed copy of correspondence, exhaustively discussed in the years 1871 to 1873 in communication with local governments and administrations. In 1871 the deleterious effects of ganja were brought to the notice of the Government of India, and local governments were directed to inquire into the truth of the allegations frequently made that the abuse of the drug produces insanity and other dangerous effects; and they were requested to report whether it would be expedient to restrict the use of ganja or to suppress the cultivation of the hemp plant altogether. A summary of the opinions of local governments will be found in the Resolution of the Financial Department, No. 3773, dated the 17th December 1873. Upon a careful consideration of these opinions the Government of India came to the following conclusion in regard to the effect of the drug:—

"It does not appear to be specifically proved that hemp incites to crime more than other drugs or than spirits. And there is evidence to show that, on rare occasions, this drug, usually so noxious, may be usefully taken. There can, however, be no doubt that its habitual use does tend to produce insanity.

"The total number of cases of insanity is small in proportion to the population, and not large even in proportion to the number of ganja-smokers; but of the cases of insanity produced by the excessive use of drugs or spirits by far the largest number must be attributed to the abuse of hemp."

The resolution sanctions the prohibition of the cultivation and consumption of ganja in Burma. This step was not considered practicable or expedient in India; but local governments were requested to "endeavour, wherever it may be possible, to discourage the consumption of ganja and bhang by placing restrictions on their cultivation, preparation and retail, and imposing on their use as high a rate of duty as can be levied without inducing illicit practices."

3. We are inclined to believe that ganja is the most noxious of all intoxicants now commonly used in India. But, even if the absolute prohibition of the use of the drug could be enforced, the result might be to induce the use of still more noxious drugs. India abounds with plants, growing wild, from which drugs can be procured which are more deleterious in their effects than ganja. One such plant is the *dhatura* (*Stramonium*), the seeds of which are already used to intensify the narcotic effect of *bhang*, a liquid preparation of hemp-leaves; and we apprehend that if the use of ganja were suppressed altogether, *dhatura* might be largely resorted to by the poorer classes as a means of satisfying their craving for stimulants.

Apart, however, from the objection just mentioned, we believe that it would be impossible to enforce in India a prohibition of the use of ganja. That drug is produced in Native States, and the difficulties in the way of preventing its import from them, if the supply in British India were cut off, would be immense. It would not, moreover, be possible to suppress the supply in British India; the hemp plant grows readily in India, in many places wild without cultivation of any kind, and it would be easy for any one addicted to the use of ganga to grow a plant or two in the enclosure of his own house and in nooks and corners which would be safe from observation and from the risk of detection.

4. The question in the House of Commons suggests that, as the possession and sale of ganja has been prohibited for many years in Burma, it is desirable that

that the same prohibition should be extended to other Provinces of British India. The analogy of Burma does not, however, apply to India. When the prohibition was enforced in Burma, the drug was very little used by the native Burmese, its consumption being almost entirely confined to coolies and other immigrants from India; and the cultivation of the plant in Burma, which had never been extensive, had virtually ceased, the consumers being dependent on importations for their supplies. In India, on the other hand, the practice of ganja smoking has existed from time immemorial, and among certain sects of Hindus, ascetics and religious mendicants, hemp-intoxication is habitually indulged in; and, as explained in the preceding paragraph, it would be impossible to suppress the growth of the plant.

5. But, although we consider it impracticable to enforce the absolute prohibition of the use of ganja, we fully recognise it as our duty to restrict its consumption as far as practicable, and we have distinctly laid down the policy to be pursued in respect of this drug in our resolution of the 17th December 1873 already quoted.

6. The Annual Reports of Excise Administration show that the subject has since been continually before local governments who are making every possible endeavour to minimise the evils and discourage the use of the drug wherever it is a source of danger to consumers.

In illustration of this remark we will now state briefly what measures have been taken to regulate the trade in ganja in two provinces for which full statistics are available, namely, Bengal and Assam, and how far such measures have been successful in diminishing the consumption of the drug.

7. Up to 1853 the duty on Bengal ganja was levied either (1) by selling by auction the privilege of sale, or (2) by charging a fixed duty for each shop. From that year a fixed duty of Re. 1 per seer was levied, and the retailer was bound to pay the amount of tax on a certain minimum quantity per month, whether he succeeded in disposing of it or not. In 1859-60 the duty was raised to Rs. 2 a seer, but levied only on the actual quantity passed out by the wholesale dealer to retail shopkeepers. In 1864–65 the system was introduced of charging duty at three different rates, according to the manner in which the drug was prepared and packed, so as to equalise the incidence of the tax on the excisable portion of the drug. The rates then fixed and the increases subsequently made, the quantity of ganja exported from the producing district, the quantity consumed within the province in each year, and the number of shops licensed for its sale, are shown in the following table:—

YEAR.	Rate of Duty per Seer.	Quantity Exported from Rajshahye in Seers.	Quantity Consumed in Seers.	Number of Shops.
1864-65		402,738	335,893	4,328
1865-66	R. A. P.	386,528	322,079	4,314
1866-67	Flat - - - 2 0 0	303,693	302,178	4,314
1867-68	Round - - - 3 0 0	421,213	338,087	3,833
1868-69	Chur - - - 4 0 0	460,254	337,708	4,073
1869-70		407,718	346,637	4,437
1870-71		461,158	387,226	4,749
1871-72		492,320	398,875	4,934
1872-73		422,410	343,723	4,694
1873-74		408,850	325,027	4,398
1874-75	Flat - - - 2 8 0	421,716	313,212	4,394
1875-76	Round - - - 3 0 0	352,847	295,569	3,262
1876-77	Chur - - - 4 0 0	341,855	298,342	3,130
1877-78		390,607	327,875	3,247
1878-79		241,861	218,466	3,244
1879-80	Flat - - - 3 8 0	270,628	205,496	3,210
1880-81	Round - - - 4 0 0	317,513	224,012	3,411
1881-82	Chur - - - 4 0 0	316,350	257,249	3,488
1882-83	From 1st April 1882 to 31st	294,695	225,837	3,271
1883-84	July 1887.	328,001	235,241	3,298
1884-85	Flat - - - 4 8 0	280,567	231,924	3,196
1885-86	Round - - - 5 0 0	282,416	228,706	3,033
1886-87	Chur - - - 5 0 0	315,238	250,566	3,046

YEAR.	Rate of Duty per Seer.	Quantity Exported from Rajshahye in Seers.	Quantity Consumed in Seers.	Number of Shops.
1887–88	From 1st August 1887 to 19th September 1889. R. A. P.	328,981	262,014	2,949
1888–89	Flat - - - - 4 8 0	319,281	256,531	2,926
1889–90	Round - - - - 6 4 0	303,355	244,050	2,819
	Chur - - - - 6 8 0			
1890–91	From 20th September 1889 to 31st March 1891.	299,600	243,837	2,586
	Flat - - - - 4 8 0			
	Round - - - - 6 4 0			
	Chur - - - - 7 0 0			
1891–92	From 1st April 1891 to 31st March 1892.	Figures not yet reported.		—
	Flat - - - - 5 0 0			
	Round - - - - 6 4 0			
	Chur - - - - 7 0 0			
1892–93	From 1st April 1892.	—	—	—
	Flat - - - - 6 0 0			
	Round - - - - 7 4 0			
	Chur - - - - 8 0 0			

From the above statement it will be seen that by successive increases of duty the consumption of ganja in Bengal has been checked with great effect. The duty at present levied is more than double what it was in 1864–65. Notwithstanding the large increase of population since that year, the quantity of the drug consumed has fallen of by 27 per cent., while the number of shops has been reduced by 40 per cent.

8. In Assam the rates of duty have generally followed the rates which prevailed in Bengal from time to time. The quantity of the drug consumed and the number of shops licensed for its sale since the constitution of the province as a separate administration are given below :—

YEAR.	Quantity Consumed in Seers.	Number of Shops.
1874–75	34,729	447
1875–76	32,582	465
1876–77	25,356	267
1877–78	25,679	248
1878–79	23,481	271
1879–80	22,826	251
1880–81	23,333	282
1881–82	22,975	286
1882–83	23,175	294
1883–84	25,526	319
1884–85	25,395	314
1885–86	20,626	317
1886–87	26,678	321
1887–88	24,525	327
1888–89	27,090	328
1889–90	28,012	327
1891–91	29,139	282

The above figures indicate that there have been two stages of consumption, one of steady decline, *i.e.*, from 1874–75 to 1881–82, and the other of increase, *i.e.*, from 1882–83 to 1890–91. The increase during the latter period has taken place in spite of repeated enhancement of duty. The Chief Commissioner

sioner, in paragraph 20 of his Resolution on the Excise Administration Report for 1890–91, suggests two possible reasons for the increase—(1) the increase in the foreign coolie population, and (2) the measures taken to suppress the sale of wild ganja which grows luxuriantly in the Assam valley, any success attending those measures necessarily tending to increase the consumption of duty-paid ganja. He has, however, directed the Commissioner of Excise to make further inquiries on the point. Still it will be seen that, compared with 1874–75, there has been a decrease in consumption, while the number of shops has been reduced by about 36 per cent.

9. After a careful consideration of the circumstances of the trade in ganja as exhibited in the Excise Administration Reports, we have come to the conclusion that it is unnecessary to do more in regard to that drug than to persevere in the policy, which was adopted in 1873, and which has been followed since that year.

We have, &c.
(signed) *Lansdowne.*
Roberts.
P. P. Hutchins.
D. Barbour.
A. E. Miller.
H. Brackenbury.
C. H. T. Crosthwaite.

Schedule of Papers.

Government of India (Revenue, Agriculture, and Commerce) Circular to all Local Governments and Administrations, Nos. 338 to 347, dated 10th October 1871.
Letter from the Chief Commissioner, Central Provinces, No. 444—27, dated 7th February 1872.
Letter from the Chief Commissioner, Central Provinces, No. 2953—105, dated 19th August 1872.
Letter from the Chief Commissioner, Mysore, No. 5651—46-G., dated 23rd February 1872.
Letter from the Government of the Punjab, No. 502, dated 10th April 1872, and enclosures.
Letter from the Government of the North Western Provinces, No. 92-A.. dated 20th April 1872.
Letter from the Resident at Hyderabad, No. 6, dated 20th April 1872, and enclosures.
Letter from the Chief Commissioner, British Burma, No. 725—65, dated 3rd May 1872, and enclosures.
Letter from the Chief Commissioner, Oudh, No. 3073, dated 8th July 1872, and enclosure.
Letter from the Government of Bombay, No. 3069—53-G., dated 3rd August 1872, and enclosures.
Letter from the Government of Bengal, No. 3863, dated 31st August 1872, and enclosures.
Letter from the Government of Madras, No. 1141, dated 9th October 1872, and enclosures.
Letter from the Government of Madras, No. 66, dated 22nd January 1873, and enclosures.
Government of India (Financial) Resolution, No. 3773, dated 17th December 1873.

Enclosures of Despatch No. 212 of 1892.

Nos. 338, 339, and 341 to 347, dated 10th October 1871.

From *A O. Hume*, Esq., C.B., Secretary to the Government of India, Department of Agriculture, Revenue and Commerce, to the Secretary to the Government of Madras, Bombay, North Western Provinces, Punjab, and Chief Commissioner of Oudh, Central Provinces, British Burmah, Mysore and Coorg, and Resident at Hyderabad.

It has frequently been alleged that the abuse of ganja produces insanity and other dangerous effects.

2. The information available in support of these allegations is avowedly imperfect, and it does not appear that the attention of the officers in charge of lunatic asylums has been systematically directed to ascertain the extent to which the use of the drug produces insanity.

3. But as it is desirable to make a complete and careful inquiry into the matter, the Governor General in Council requests that *

* Madras	with the permission of His Excellency the Governor in Council, you
Bombay	
North Western Provinces	with the permission of his Honour the Lieutenant Governor, you
Punjab	
Oudh	you
Central Provinces	
British Burmah	
Mysore and Coorg	
Hyderabad	

will be so good as to cause such investigations as are feasible to be carried out in regard to the effects of the use or abuse of the several preparations of hemp. The inquiry should not be simply medical, but should include the alleged influence of ganja and bhang in exciting to violent crime.

The police and magistracy will doubtless be able to furnish information upon this branch of the subject.

4. If the result of the investigation should seem to call for any action in the direction of restricting the use of ganja and the other preparations of hemp by enhancement of the duty upon consumption, or of limiting, or even prohibiting, the cultivation of the plant, it is desirable that the Government of India should be in possession of the advice of the several local governments concerned as to the expediency and practicability of any such measures.

5. The question should be considered in all its bearings, and with reference to the whole policy of the Excise Department.

No. 340, dated 10th October 1871.

From *A. O. Hume*, Esq., C.B., Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce, to the Secretary to the Government of Bengal.

It has been frequently alleged that the abuse of ganja produces insanity and other dangerous effects.

2. The information available in support of these allegations is avowedly imperfect, and it does not appear that the attention of the officers in charge of lunatic asylums has been systematically directed to ascertain the extent to which the use of the drug produces insanity.

3. But as it is desirable to make a complete and careful inquiry into the matter, the Governor General in Council requests that, with the permission of His Honour the Lieutenant Governor, you will be so good as to cause such investigations as are feasible to be carried out in regard to the effects of the use or abuse of the several preparations of hemp. The enquiry should not be simply medical, but should include the alleged influence of ganja and bhang in exciting to violent crime.

The police and magistracy will doubtless be able to furnish information upon this branch of the subject.

4. If the result of the investigation should seem to call for any action in the direction of restricting the use of ganja and the other preparations of hemp by enhancement of the duty upon consumption, or of limiting, or even prohibiting, the cultivation of the plant, it is desirable that the Government of India should be in possession of the advice of the several local governments concerned as to the expediency and practicability of any such measures.

5. The question should be considered in all its bearings, and with reference to the whole policy of the Excise Department.

6. There seems reason to believe that the Bengal ganja, grown in the district of Rajshahye, differs from, and may be more deleterious than, the ganja produced

duced in other parts of India, and I am accordingly directed to request that, with the permission of His Honour the Lieutenant Governor, inquiry may be instituted on the point.

7. It appears likely from Section 15 of Regulation VII. of 1824, that some inquiry may have been made at about the period of the passing of the Regulation into the effects of the use of hemp and its preparations. The records of the Board of Revenue, Lower Provinces, or of your office, may perhaps contain some papers on the subject, with the substance of which the Government of India would desire to be favoured.

No. 444—27, dated 7th Febuary 1872.

From *J. W. Neill*, Esq., Officiating Secretary to the Chief Commissioner, Central Provinces, to the Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce.

I AM directed to acknowledge the receipt of your reminder, No. 111, dated 1st February, calling attention to your letter, No. 344, dated 10th October last, in which it was requested that an inquiry might be made into the question of the use and abuse of ganja and other preparations of hemp, the tendency of indulgence in the use of the drug to produce insanity, and to excite to violent crime.

2. As yet, opinions and reports have not yet been received from all officers whom the Officiating Chief Commissioner wished to consult, and such reports as have been received, contain very little on which an opinion might be based.

3. It is generally admitted that excessive indulgence in the use of ganja does produce insanity, but that by the timely abandoning of the habit, such insanity may be cured.
No valuable medical facts have been obtained.

4. Regarding the effect of ganja in exciting to crime, the magistrates and police officers do not seem to consider that there is evidence to show that crime is committed in consequence of men indulging in the drug.

5. Unless there is an urgent necessity for the Officiating Chief Commissioner's opinion to be submitted at once, he would ask permission to reserve it for a while, so that he may, if possible, obtain further information.

No. 2953—105, dated 19th August 1872.

From *Lindsay Neill*, Esq., Officiating Assistant Secretary to the Chief Commissioner, Central Provinces, to the Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce.

I AM directed by the Chief Commissioner to reply to your letter, No. 344, dated 10th October 1871, inquiring whether the use or abuse of ganja, or of any other preparations from hemp, tends to produce insanity or excites to violent crime to such an extent as to call for any action on the part of Government in the direction of either restricting its use by an enhancement of duty on its consumption, or of totally prohibiting its cultivation.

2. In these provinces there are three preparations from the hemp plant (*cannabis sativa*) in pretty common use, viz. :—

(*a*) Ganja. (*b*) Bhang. (*c*) Charas.

(*a*) Ganja is prepared from the dried plant which has flowered, from which the resin has not been removed. It is mixed with tobacco, and,

with a little water, is beaten up into a mass. It is then allowed to dry, and when dry is reduced to a powder, and either smoked in a hooka, or eaten.

(*b*) Bhang is prepared from the dried leaves of the plant, separated from the flowers and stalks by pounding. It is more in use among the wealthier class of the community, and is generally used either in the form of sharbat or mixed up with ghi and sugar in sweetmeats (barfi or majum).

(*c*) Charas is the resinous exudation of the plant, and, in comparison with the other two preparations, is little used.

3. From the various reports which the Chief Commissioner has received from Officers of this Administration, he finds that there is a considerable difference of opinion regarding the evil effects attendant on a continued indulgence in ganja smoking. In the first place, it may be remarked that the natives generally are of opinion that continued indulgence inevitably leads to permanent insanity. This opinion, however, is not altogether borne out by the data afforded by the lunatic asylum statistics. There are two such asylums in these provinces, one at Nagpur, the other at Jabalpur. Dr. Beatson, civil surgeon, Nagpur, and superintendent of the asylum, reports that out of 317 lunatics received into the asylum since 1864, there were 61 in whom insanity had been occasioned by an immoderate indulgence in ganja. Of these 61, 10 have died, 28 have been discharged cured, and 23 remain uncured. He therefore concludes that excess in ganja smoking does produce an insanity which is transient if the habit is relinquished, but otherwise permanent.

Dr. Rice, the Superintendent of the Asylum at Jabalpur, states that out of 120 lunatics at present confined, 37 indulged in ganja-smoking. From the inquiries he instituted, he ascertained that out of every 10,000 of the population, 1,600 habitually consume ganja or bhang; that the total lunatics at large and under restraint, including congenital idiots, do not exceed the proportion of 5 to every 10,000; in other words, that there is only one lunatic *from all causes* for every 300 ganja consumers. The conclusions he arrives at are these—

(1) That the abuse of ganja, bhang, and charas injures the constitution in the same way as excessive indulgence in any other narcotic drug would.

(2) That it does not necessarily cause insanity, except in those pre disposed to it.

(3) That indulgence in it certainly renders men rough in manner and in speech, quarrelsome, and reckless of consequences.

4. It cannot, however, be alleged with any show of reason that ganja or bhang has, in these provinces, played any part in exciting to violent crime. The records of murder cases from 1863–1871 have been examined, but not in a single instance is temporary or permanent insanity induced by ganja or bhang alleged as the cause of the crime. It has, however, been asserted by several officers that persons who intend to commit any grave offence indulge in ganja to brace themselves up for the dangers they may have to undergo, in the same way as Europeans frequently have recourse to the brandy bottle to nerve themselves to the committal of crime; but in all such cases ganja cannot be said to "excite" to crime. It is only indulged in to stimulate courage or create a temporary excitement and insensibility to fear.

It has also been remarked that so listless and disinclined to all manual labour and physical exertion do habitual consumers of ganja become, and so unable to resist the temptations of the drug, that they frequently commit offences, such as theft, and the like, to obtain the wherewithal to satisfy their desires. As sufficient ganja can be obtained for one anna to satisfy even a habitual consumer for many days, the Chief Commissioner is not disposed to attach very much weight to this assertion. But even if ganja were proved materially to influence the returns of crime, it is necessary to bear in mind that want of moderation and absence of self-restraint in the consumption of any stimulant generally go hand in hand with general want of moral principle.

5. The danger then in this, as in every other form of self-indulgence, is that moderation may grow into excess, and there is no doubt that continued indulgence in this drug tends to impair the nervous system, renders men incapable

incapable of mental application, and reduces them to a state of extreme debility and decay. It has been insisted on by several officers that inquiry establishes the fact that the use of ganja is always injurious, never beneficial; and that herein exists a material difference between ganja and spirits. But this view is again combated by not a few who assert, and apparently not without great show of reason, that persons whose employment subjects them to great exertions and fatigues, such as palki bearers, &c., are solely enabled to perform the wonderful feats they not unfrequently do, by being supported and rendered insensible to fatigue by ganja; and the use of ganja leaves in them no after-effect of an injurious kind.

6. It is admitted that the consumption of drugs has of late years very materially increased, and fears have frequently been expressed by district officers that since the introduction of the sadar distillery system and the consequent rise in the price of liquor, many people who formerly drank have taken to drugs as a substitute. Reports received from the district officers of Mandla and Balaghat seem to place this beyond doubt. At the same time natives whose opinions are entitled to weight, declare that the tastes for liquor and for drugs are independent of and not affected one by the other. The drinkers have always been well-defined classes, and include fishermen, boatmen, workers in rice fields, and others with whom drams are a necessity. Drugs, on the other hand, seem to have established a position of their own, and to have extended their influence more among the idle classes (such as the faquirs, bairagees, thieves and prostitutes) of the community than among the workers. There is, however, a possibility, now that drug consumption is gaining ground, that children of the drinking classes may become drug consumers.

7. Taking all these facts into consideration, Mr. Morris is of opinion that it is expedient that some action should be taken by Government to impose restriction on the cultivation, possession, and sale of ganja; and I am now briefly to describe—

(1) The restrictions which at present exist.

(2) The measures which it appears to the Chief Commissioner should be taken.

With the exception of Chhattisgarh, where eight anna and rupee licenses are granted, the cultivation of ganja is not interfered with. The natural consequence is that each villager has in the little plot in front of his hut three or four hemp plants. Increased indulgence in this drug may thus exist amongst the rural population without any corresponding increase in the revenue returns. Practically, then, the ganja consumed in towns alone pays duty. There the sales are in the hands of a monopolist, who purchases annually the drug farm, and the State obtains the maximum duty which competition can induce. Without entering into details regarding the excise on liquor and the sadar distillery system, the fact may be stated that our excise policy within the last few years has altered the relative positions of ganja and liquor to their respective consumers. While the latter has been quadrupled in price, the former remains as before to a large extent free from all duty whatever.

8. The Chief Commissioner thinks that the only effectual system would be to prohibit absolutely the cultivation of ganja without a license, and to restrict the issue of licenses to places where the cultivation and out-turn could be checked by the ordinary revenue establishments. As in these provinces ganja is not cultivated as a fibre, the restrictions now proposed would in no way interfere with hemp as an article of commerce. The imposition of such restrictions would not, so far as the Central Provinces are concerned, be a matter of much difficulty; but to be really effectual and to prevent smuggling and its attendant evils, there must, in the opinion of the Chief Commissioner, be an extension of similar restrictions to all contiguous provinces.

No. 5651—46 G., dated 23rd February 1872.

From *J. Campbell*, Esq., Secretary to the Chief Commissioner of Mysore, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

In reply to your letter No. 346 of the 10th October last, I am directed by the Chief Commissioner to submit, for the information of Government, the following particulars regarding the alleged effects of ganja on persons addicted to its use, and its tendency to create insanity or excite to crime. The necessary inquiries have been instituted through the Officiating Judicial Commissioner and the Deputy Inspector General, Indian Medical Department, Mysore Division and Ceded Districts, and their reports may be said to represent respectively the police and medical views of the question.

2. It is gathered from Mr. Mangles' report that the several officers in the Nagar Division who have been consulted, are unanimous in considering that preparations from hemp are used to a very limited extent in that division, and that cases of insanity produced, or of crime committed, under its influence, are comparatively rare; the superintendent's own experience being that intoxication from this cause is seldom alleged in cases of crime; that its excessive use is confined generally to dissolute Mahommedans, faquirs, and idle vagrants, and its influence on crime hardly perceptible.

3. No instances of insanity, or of crime committed under the influence of ganja, is reported from the Ashtagram Division as having come under the observation of the officers addressed on this subject; but the general impression among them is, that the use of ganja produces very injurious effects, and that some measures of restriction, as regards the manufacture and sale of the drug, are requisite. The Town Magistrate of Mysore adds that crimes relating to the person are increased by the use of ganja, and from cases which have come before him, he finds that, if used in excess, ganja produces a helpless state of imbecility rather than of insanity.

4. In the Nandidroog Division also the opinion prevails that the constant use of ganja affects the mind very prejudicially, and some prohibitory measures are recommended to limit the use of the drug.

5. The Superintendent of Coorg states that ganja possesses valuable medicinal properties, if used in moderation; that it is considered to be an excellent febrifuge by the jungle tribes, and does not produce insanity or aggravate crime.

6. The report furnished by Dr. Ranking shows that out of a total of 250 admissions in the lunatic asylum in Bangalore during the past five years the use of ganja is assigned as the cause of insanity in 82 cases, but 64 persons of the number so affected subsequently recovered their reason, and were discharged.

7. In the Central Jail, the officer in charge has not observed that ganja-smoking has any marked effect in inciting to crime, and that out of seven men then in jail, whose appearance and statement show them to be ganja-smokers, one was incarcerated for robbery, two for theft, two for desertion, one for breach of trust, and one for trespass.

8. While fully believing that the use of ganja frequently incites to temporary insanity, and more generally to a state of frensy, with a homicidal tendency, Dr. Ranking is unable to state any facts calculated to advance the present inquiry.

9. In conclusion, I am directed to add that there is but little cultivation of the hemp plant in Mysore and Coorg, and that the use in these provinces of the intoxicating drugs prepared from it does not appear to be of a character to call for any special measures of restriction; but Colonel Mead considers that the sale of these drugs should not be permitted, except by vendors specially licensed for the purpose, and that the highest possible excise duty should be imposed on their manufacture, so as to limit their use as much as may be practicable, without encouraging their illicit preparation.

No. 502, dated 10th April 1872.

From *Lepel Griffin*, Esq., Officiating Secretary to the Government of the Punjab, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I HAVE the honour, by desire of the Lieutenant-Governor, to reply to your letter, No. 342, dated 10th October last, in which it was requested that a complete and careful inquiry should be made with the view of obtaining reliable information as to the effects of the use or abuse of the several preparations of hemp.

2. The inquiries made have been very general, but the reports received are most contradictory, the civil and police officers differing greatly in opinion as to the influence of these preparations in exciting to crime; while the medical officers disagree as to their effect in inducing mania or mental derangement more or less violent. But though these reports fail to convey any unanimous conclusion as to the effect of excessive indulgence in these drugs, the consideration of the questions referred for opinion may be confined to that of the expediency or practicability of imposing restrictions by legislative enactment on the cultivation, sale, or use of these preparations, on which the Lieutenant Governor's views have been asked, as it is assumed that it is not intended to move the Legislature to take action in the matter unless it can be distinctly proved that their use or abuse excite to violent crime. Such proof is certainly not afforded by the papers collected by this Government. If, therefore, these preparations have no effect upon *crime*, and only injure the persons who use them, it is difficult to see in what manner the law can interfere to restrict their use in a country where opium is a monopoly of the Government, and the effects of which are perhaps as injurious when taken in excess as those of hemp.

3. The effects of the latter, in its different preparations, is fully discussed by Dr. Penny, the Superintendent of the Delhi Lunatic Asylum, in his report, of which copy is forwarded herewith. This report shows beyond all doubt that, though harmless when taken in small quantities, the abuse of hemp may, and often does, produce mental derangement, and that a considerable percentage of cases in the Delhi Lunatic Asylum have their origin in the use of this drug The conflicting statements of the doctors found in the papers submitted to this Government are not of much importance, compared with the practical experience of the Superintendent of the Delhi Lunatic Asylum.

4. With regard to the question of hemp exciting to violent crime, the experience of the Inspector-General of Police, reflecting that of all the officers of his department, is the most extensive. Copy of his reply is forwarded, and also copy of the report of the Superintendent of the Lahore Lunatic Asylum, from which it will be seen that a considerable proportion of the lunatics confined for violent crimes have been addicted to the use of hemp, and there is no doubt from the statement of the Superintendent of the Delhi Asylum, and others, that the use of hemp, acting upon excitable dispositions, predisposes, when taken in large quantities, to violence. But it seems to be also clear from the great concurrence of doctors, and especially from the recorded opinion of the Inspector-General of Police, that the amount of crime, violent or otherwise, which can be traced to the use of hemp, is exceedingly small; so small as to make it altogether impolitic and unnecessary to attempt to restrict the sale or preparation by any legislative measures. In the views of the Inspector General of Police His Honour entirely agrees. If people are prohibited the use of hemp and opium, they will in all probability take to some other stimulant, such as alcohol, the amount of violent crime resulting from the abuse of which, as English statistics unmistakeably prove, is more than that of all stimulants used in India put together.

Dated 10 February 1872.

From *J. C. Penny*, Esq., M.D., Civil Surgeon, Delhi, to the Officiating Secretary to the Government of the Punjab.

In reply to your takid, No. 17, dated 3rd February 1872, regarding the report called for in October 1871, on the abuse of ganja and other preparations of hemp, I regret the delay that has occurred. We have had an outbreak of cholera, a camp-of-exercise, and at the beginning of the year there is an accumulation of annual returns and reports, which has rendered it impossible to take up a broad subject in a short time.

We have abundant evidence of the use and abuse of *cannabis*, or Indian hemp, in the large city of Delhi, where there are two lakhs of people, and especially with a Hindu population in excess of Muhammadan. Both the rich and the poor among Hindus indulge in this narcotic, whereas only the lower class of Muhammadans partake of it. The habitual indulgers are to be found in saises, dhobis, faquirs, labourers, kahars, and halalkhors. They may be found in groups of 20 and 30 from three to five in the afternoon in the Kerdun Shuraf, Panch Kua, Eed Ghar, or on the banks of the Jumna, clubbing together for a smoke at from a dumrie to a pie or two a head. The pipe is passed round until they become merry or angry, and too often quite intoxicated.

Brahmins, mahajuns, and bunyas generally smoke charas at their own houses every day in the afternoon.

I understand that there are about fourteen shops in the city of Delhi at which you can purchase *cannabis* in various forms.

Bhang is a very cheap and common form of Indian hemp, which is not smoked, but drunk, and is prepared in the following manner: The leaves and stalks of the *Cannabis Sativa*, which is a jungle or low shrub, growing everywhere in India, especially in the lower ranges of the Himalayas, are ground very fine by means of either rolling pin and stone slab, or of a pestle and mortar, the pestle having a long handle. Water is added little by little until a fine smooth green liquid paste is obtained, which is then strained through a cloth. From half drachm to two drachms are mixed with milk and sugar and then swallowed. Very poor people who cannot afford milk or sugar drink it neat, with merely the addition of a little black pepper. One masha is said to be a harmless quantity, and six mashas will produce intoxication.

The general effect of this form of hemp is to produce quiet, pleasant delirium and stupor rather than excitement, which the next form of Indian hemp is apt to create.

Charas is the dried, sticky, resinous exudation from all parts of the *Cannabis Sativa;* even from the pith inside the stalk. The best kind come from Samarcund, Bokhara, and Cabul. From the Ladakh hills it is greenish black in colour, resembles the extract of henbane when moist, and seammony resin when dry and hard. It is bitter in taste, and is smoked with or without tabacco; half a drachm affording a cheerful smoke for two or three men, and costing about two or three pie. It is smoked in a chillum or hukah, on red-hot charcoal, after having been made into a pill or bolus. *Upla* or cow-dung fire is very much preferred, The charas having been placed on the red hot *upla* or charcoal, and the pipe put into the mouth, a strong inhalation is made by which a blaze is created in the chillum; then by a prolonged expiration a clever smoker will exhale an immense column of smoke. Even one whiff will sometimes make the eyes red, and stimulate the nerves to an extent almost inconceivable. The chillum is handed rapidly round from one person to another; any delay spoiling the charming effect. In cold weather, in the rains, or at marriage festivals, resort is made to this artificial stimulant.

Ganjar or ganja although a different form from the last, is smoked in the same way. It is the dried flower-head of *Cannabis Sativa*, but it is not much in use in the Delhi district. Great quantities are consumed in Calcutta and Lucknow, and thereabouts. It is an equally pernicious narcotic; it is rubbed or finely mulled by the hand, and it is said you can detect the old ganja-smoker by a hard corn-like thickening of the hand. It is also smoked in a chillum in the same way as charas by a prolonged inspiration and slow expiration.

The

The last preparation of *cannabis* is *majum*, which is a dirty green sweetmeat in the form of toffee, sold at the rate of an anna per ounce. It is made with the ground leaves of the plant mixed with milk, butter, sugar, and atta, and then baked. About one drachm is eaten at a time. This is the preparation often used by thugs and professional thieves for purposes of poisoning.

Each and all of these forms of Indian hemp act on the nervous system, exercising a peculiar influence over the brain and spinal chord, and their nerves. They also paralyse the sympathetic nervous system, as shown in the arrest of the secretion of the salivary glands.

Their action is chiefly on the mental faculties, and, if long continued, they may produce chronic disorder of the mind. The first effect is that of a stimulant, exalting or exciting the mind; for we find an indescribable sense of happiness; a tendency to laughter. Sometimes the charas-smoker will feel as if he were rising through the air and descending again, or he has an irresistible propensity to dance or jump. Both after drinking *bhang* or smoking charas, there is a dry burning feeling of the throat. Sometimes there is oppression of breathing; catalepsy is said to be an effect.

There is no doubt of the appetizing influence all forms of *cannabis* have, and if milk, ghee, and a great deal of nourishment be taken, much of the injurious action is prevented.

After the stage of excitement the mind becomes confused, attention is arrested, the man becomes stupid, and at length arrives at the stage of depression.

Old bhang-drinkers, charas and ganja-smokers and majum-eaters are, as a rule, emaciated. They lose vital energy, become impotent, forgetful, weak-minded, and melancholy. Others again, especially charas-smokers, are irascible and occasionally violent or abusive.

Again charas-smokers are often asthmatic. I can remember several where there was emphysema of both lungs; where, like broken-winded horses, they had ruptured the fine air cells of the lungs from long-continued and oft-repeated inspiration and expiration. Hæmoptysis is not uncommon amongst them.

There is a state of brain produced by over-indulgence in bhang or charas, which corresponds to *delirum tremens;* sudden suspension of its use causing a state of most violent excitement. The patient talks incessantly; pelts those about him with bricks or stones; bites and tears his clothes; and it would be dangerous to approach him. There is great thirst; craving for food; the skin is hot, but no fever; decidedly sleepless; for he bawls and shouts all night. He may die from exhaustion of the brain, or stoppage of the heart's action from paralysis of the sympathetic, or he may gradually recover.

Insanity, or permanent disorder of the mind, is a result of the evil habit of over-indulgence in this narcotic, I think more frequently in those who do not live well. On a reference to the Annual Report of the Lunatic Asylum in Bengal for 1871—Dullunda, Dacca, Patna, Moydapore—I find that *cannabis* constitutes 31 per cent. of the whole; 78 of the known causes of insanity. In previous years the per-centage has been even as high as 50 per cent. in some of these asylums. During the past five years, in my small lunatic asylum in Delhi, I have had more than 50 geniune well-marked cases of mental derangement from the excessive use of Indian hemp.

The following table shows the percentages of total treated in the Delhi Lunatic Asylum:—

In 1867 - - - - -	11·92 per cent.
„ 1868 - - - - -	16·61 „
„ 1869 - - - - -	17·68 „
„ 1870 - - - - -	20·60 „
„ 1871 - - - - -	17·14 „

These figures do not represent the whole of the cases of insanity caused by *cannabis*, because there are so many admissions where the cause is not accurately known, and the history a mere blank; but they show the fact that disorder of the mind often results from a most pernicious habit.

The most common form of insanity from Indian hemp is dementia, with or without melancholia, where the patient is totally indifferent to persons and things, and to what is passing around him. He seems to hold no intercourse

with the world, has a stupid state, is very quiet, sleeps well, and has a voracious appetite. There are three or four of these cases now in the asylum.

A less frequent form from the incautious use of hemp shows itself in excitement and paroxysms of violence, with intervals of quiet. They talk loudly, are authoritative and commanding, easily made angry; and this state of excitement may last for a day or two, when the patient becomes more tractable, but he is never safe.

Durya Shah, a faquir, now in the asylum, is seldom out of close confinement, his being a well-marked case of a dangerous lunatic from bhang.

Kurreen Buksh has been in the Lahore Lunatic Asylum, and is now in the Delhi Asylum. He was a herdsman, indulged too freely in bhang and charas, and is now a confirmed lunatic.

Good feeding, great kindness, strict cleanliness, indulgence of every harmless kind, a little tobacco, and carefully watching all the functions of body, contribute towards the relief of these most unhappy sufferers.

No. 26, dated 21 February 1872.

Memo. from Lieut.-Colonel *G. Hutchinson*, C.S.I., Inspector-General of Police, Punjab, to the Officiating Secretary to the Government of the Punjab.

In reply to his Circular No. 62, of the 24th October last, regarding the abuse of ganja and other preparations from the hemp plant, forwards, enclosed, a *résumé* compiled from the reports of District Superintendents of Police on the subject.

2. Observes that "dhatura" is more generally used in poisoning for plunder than any other drug, and that Inspector-General cannot as yet show that sufficient harm arises from the drugs under report to render any special legislation necessary.

MEMORANDUM.

The information called for by Government of India regarding the injurious effects of ganja and bhang on those who are addicted to its use is now supplied as far as officers are able to state.

The main points of enquiry are—

I.—Does the use of ganja produce insanity or other dangerous effects?

II.—Do ganja and bhang excite to violent crime?

III.—Are these used by criminals in furtherance of their designs?

IV.—Is legislation necessary to restrict the use of these preparations of the hemp plant by enhancement of duty on consumption or on cultivation of the plant?

Insanity.

In regard to the first point,—use of ganja resulting in insanity,—officers have no known cases to report, but state they have heard of such.

Amritsar has heard of two men having been temporarily insane for two years from "charas" smoking.

Gurdaspur states that it causes imbecility, and not unfrequently confirmed lunacy.

Hushiarpur says bhang is prepared as an infusion and flavored with different ingredients according to taste, and, if taken in large quantities, produces aberration. If its use in strong doses is continued it causes insanity. He reports that in March 1870 a man who was much addicted to its use was sent to the lunatic asylum. In October 1870 a "charas" smoker was also sent there. In December last there was a similar case of insanity from charas.

Multan refers to the works of Dr. N. Chevers (Medical Jurisprudence, pages 219, 777 *et seq.*) and Dr. Honigberger's Thirty-five years in the East, pages 154–7. He

He says bhang drinking has been known to result in insanity, but can give no recorded case.

Kangra says the habitual use of ganja produces idiotcy, and District Superintendent, Jhelum, observes that the memory becomes weakened.

Inciting to crime. 2. On the second point officers report as follows :—

Amritsar instances two cases in which assaults were committed by persons who were said to be at the time under influence of the drug "charas"; in one case a lady was assaulted in 1867, in the other a constable cut down in 1865—a Tehsil chaprassie.

Hushiarpur says that in March 1864 the Nehung Sikh who killed the Reverend Mr. Janviers (missionary) was a known bhang drinker.

In July of the same year three Nehungs entered the Gurdwura at Anundpur, snatched up some swords, and severely wounded the Mahunt. They were under the influence of bhang at the time. Five other cases of violent assault and wounding are reported from this district by bhang drinkers and "charas" and "ganja" smokers.

In August 1871 a man attacked and killed a boy who was herding cattle. He was a faquir, and addicted to the use of both bhang and charas.

Hemp preparations used by criminals. 3. Use of hemp preparations by criminals in furtherance of their designs—

Ambala says bhang is used, but gives no instance.

Delhi alludes to one case in which bhang was employed to cause stupor.

Gurdaspur says that hemp preparations are rarely employed by themselves, but are often used as media for administering dhatura.

4. Restriction on use of the drugs and cultivation of the hemp plant—

Gurdaspur suggests enhanced tax on ganja and charas, but would not recommend any interference with the use of bhang.

Hushiarpur agrees with this.

Multan considers that the number of vendors of the drugs should be reduced, also the quantities specified in Section 19 of Act X. of 1871, and the importation of the *Cannabis Indica Cashmireana* be entirely prohibited.

Jhang agrees as to restriction.

At page 216 of Stewart's Punjab Plants, it is stated that "a cold infusion of the tops (hemp plant) is generally used, and is in great favor with Sikhs, who are debarred from tobacco, and so make up by the use of this, opium and spirits."

The District Superintendent, Delhi, reports that about 10 per cent. of the police force use bhang in moderation as a stimulant during hot weather; while about 5 per cent. are habitual drinkers of it, and mostly Punjabis and Sikhs.

Dr. O'Shaughnessy appears to have made some experiments with "charas" or hemp resin; for the work is alluded to at page 282 of Voigt's Hortus, where it is also observed that charas is useful as a remedy against traumatic tetanus.

In Elliot's Supplemental Glossary, North-Western Provinces, page 81, it is stated that bhang is made from the female hemp plant (*Cannabis Sativa*), the male plant producing the exudation called ganja, and that the best bhang of the North-Western Provinces comes from Baraich and its neighbourhood, and from Dundwari, in Kanouj; while the best ganja is from Bengal.

At page 217 charas is mentioned. The Bokhara charas is most esteemed, and fetches double the price of the country produce.

Bhadurgarh, in Delhi District, is the grand depôt for the charas of the North-Western Provinces.

Ganja is referred to at page 373. That from Bengal is most valued. It is prepared from the dried plant, from the flowers of which the resin has not been taken off. It is said that each plant will yield from 2 to 2½ seers.

Chever's Medical Jurisprudence contains a great deal of information at pages 219, 777, &c.

No. 404, dated 21 December 1871.

From *J. B. Scriven*, Esq., Superintendent, Lunatic Asylum, Lahore, to the Deputy Commissioner, Lahore.

In reply to your letter, No. 1920, dated 30th October 1871, requesting a report on the influence of the various preparations of Indian hemp in producing insanity and predisposing to violence and crime, I have the honour to inform you that I have made inquiries on this subject with reference to the 248 lunatics who were under my care in the lunatic asylum on the 27th November last. My sources of information have necessarily been imperfect, being, in fact, simply the rolls of the insane people furnished on admission, or the statements of the lunatics themselves. It is probable that all the persons reported as addicted to these drugs are correctly so reported, though I doubt not there are many other inmates of the asylum who have been in the habit of using them, but are unwilling to confess it.

2. It appears from the inquiry that out of 248 lunatics, 89 are in the habit of using some preparation of hemp, men, 82; women, 7; total, 89. Of these, 17 are criminals, 14 having committed violent crimes. The whole number of criminals confined for violent crimes is 28; hence half, or 50 per cent., probably have been predisposed to commit these crimes by the use of this intoxicating drug.

3. As to the non-criminals, 72 men are reported as using hemp; but only 17 of these are violent. However, any of these 17 violent men, if let loose, might commit violent crimes; so that they may, for our present purpose, be bracketted together with the violent criminals that indulge in hemp; hence it appears that of the 89 persons said to be addicted to hemp, 31 are dangerous characters, or 34·83 per cent.

4. The number of women about whom information has been obtained is too small for any special deductions to be drawn regarding the use of hemp among the female sex.

No. 92-A., dated 20th April 1872.

From *C. A. Elliott*, Esq., Secretary to Government, North Western Provinces, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I AM directed to acknowledge the receipt of your letter, No. 341, dated 10th October 1871, requesting that investigations might be made as to the extent to which the abuse of the various preparations of hemp is known to produce insanity and to excite to violent crime, the ultimate object of the investigation being, if necessary, to impose restrictions on the use of ganja and other deleterious preparations.

2. In reply, I am to state that the reports received from the officers consulted disclose a wide variety of opinion. Generally the prevalent impression may be said to be that ganja and charas are exciting in their effects, as opposed to bhang, which is described as being lethargic. It is feared, however, that there is but a slender ground-work of facts for the opinion. Even the returns of the lunatic asylums are based on hearsay reports, and have no scientific value.

4. It is, in his Honour's opinion, impossible that if the results were really as bad as is sometimes supposed, either as inciting to crime or deteriorating the human system, such a wide inquiry would not have resulted in a more general and decided *consensus* of opinion, and in the production of numerous facts bearing out that opinion.

4. Under

4. Under these circumstances His Honour the Lieutenant-Governor cannot recommend the adoption of any special measure to limit or stop consumption or the production of the plant. It grows freely in the country lying along the foot of the Himalayas, and it can be grown in every moist and low-lying tract. Such being the case, to prevent its production would, be His Honour apprehends, almost impossible.

5. With respect to the advisability of enhancing the duty at present imposed, I am to state that the system in force in these Provinces, which is to farm the lease for a district or part of a district to the highest bidder, precludes the possibility of such a course, for the adoption of which no means exist unless the sale is made a monopoly, and treated by Government in a similar way to that of opium.

6. I am to add that the record of the investigation will, if His Excellency so desires, be submitted for the perusal of the Supreme Government.

No. 6, dated 20th April 1872.

From Captain *G. H. Trevor*, 2nd Assistant Resident, Hyderabad, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I HAVE the honour, under instructions from the Resident, to acknowledge the receipt of your letter, No. 347, of the 10th October last, requesting information as to the extent to which the use of the several preparations of hemp produces insanity or excites to violent crime, and also whether any action is considered advisable with a view to restricting their use by enhancement of the duty on consumption.

2. Copy of the communications received from the several officers marginally noted, whose opinions were invited on this subject, is enclosed. It would seem that the use of ganja and bhang in Berar is not very extensive, and is restricted, in a great measure, to the lower class of the population. The drug in some shape or other is found to be resorted to either before or after the commission of a crime to strengthen the nervous system. Its habitual use, however, undermines and destroys the constitution, producing premature imbecility, but is not believed to be conducive specially to the commission of violent crime.

1. From Commissioner, East Berar, No. 62, dated 8th January, with enclosures.
2. From Commissioner, West Berar, No. 76, dated 11th January 1872, and enclosures.
3. Inspector General of Police, Hyderabad Assigned Districts, No. 226-A., dated 30th December 1871, with enclosures.
4. From Sanitary Commissioner, Hyderabad Assigned Districts, No. 2357, dated 6th November 1871.

3. Mr. Saunders believes that the abuse of this drug is not so great in this part of India as to necessitate the introduction of any special legislative measures.

No. 62, dated 8th January 1872.

From the Commissioner, East Berar, to the First Assistant Resident, Hyderabad.

I HAVE the honour, with reference to your letter, No. 1061, dated 31st October last, to forward herewith, for the Resident's perusal, the reports of district officers as to the extent to which the use of "ganja" or "bhang" produces insanity, or excites to the commission of violent crime.

2. Judging from my own observation I do not think that the people of Berar are much addicted to the use of these two preparations of opium and hemp. The preparation most commonly consumed here is called muddat, which is a

mixture of opium and the leaves of the common *barbel*; but there is nothing whatever to lead me to suppose that the use of this drug incites to the commission of violent crime. On the contrary, our records show that violent crime is rare in this province, and so long as this is the case, I do not think that we need take measures to limit the use of muddat.

3. It is very well known that a man in Upper India who resolves to commit a violent crime almost invariably partakes largely of bhang just before its commission. He does this with a deliberate intention to deprive himself for the time of reason and of the powers of reflection; in short, to reduce himself to the condition of a savage wild beast, so that he may have no compunction when his victim is before him; but I cannot call to mind more than one or two cases which I have tried in this part of India in which the accused had thus prepared himself for the commission of the crime, and if my memory serves me rightly, in both cases the offender was a foreigner, *i.e.*, an inhabitant of Upper India.

4. Whether the use of ganja or bhang or even of "muddat" induces insanity is a matter on which I am scarcely competent to give an opinion which would be of any value to the Government of India, but I can hardly suppose that these drugs can be used with absolute impunity. The brain must, I think, be more or less affected, and I incline to think that while the use of bhang (a preparation of *hemp*) excites the brain, and thus may lead to madness, the use of muddat (a mild preparation of *opium*) soothes the brain, and deadens the faculties, and thus its abuse may lead to stupor and eventually to idiocy.

No. 441, dated 16th November 1871.

From the Deputy Commissioner, Oomraotee District, to the Commissioner, East Berar Division.

With reference to your memorandum, No. 2484, of the 4th instant, I have the honour to inform you that the people of this district are not much given to bhang and ganja. No instances of producing insanity or exciting violent crimes by the excessive use of these drugs ever came under my observation.

2. This subject has, I find, been ably discussed by Norman Chevers, M.D., in his *Manual of Medical Jurisprudence for India*, at pages 219 to 226, 777 to 780, 786, 799, and 809 of the edition for the year 1870. In the pages quoted, you will find a number of cases reported, and they contain several medical opinions.

No. 534, dated 22nd December 1871.

From Captain *K. J. L. McKenzie*, Officiating Deputy Commissioner, Ellichpur District, to the Commissioner, East Berar.

I have to acknowledge your reminder, No. 2819, of 1871, calling without further delay for report on the question submitted with your No. 2485 of 1871, viz., as to the extent to which the use of ganja or bhang produces insanity or excites to violent crime, the question to be considered in all its bearings with reference to the policy of Government as to excise duty. The subject had not been forgotten; subsidiary orders went to all magistrates under me, and I directed a search into the criminal records for cases throwing light on it. Captains Alexander and Loughton and Mr. Dinshawjee have as yet alone reported, and they tell me that nothing has come to their knowledge, showing directly or indirectly the effects of opium or its compounds as an exciting agent. The other magistrates have not yet reported, but, under pressure of your reminder, I will not wait for their answers, the more especially as they are

are not likely to be different from those already received. On the question of insanity resulting from the abusive use of opium and its compounds, it seems to me that the magistracy as a body can hardly be expected to throw much light. Asylums and large hospitals where such cases are treated would be the best sources of information. As to the second point, the extent to which opium and its compounds has played a part as an exciting agency, I have observed that in all violent crime committed under motives of religious fanaticism, in revenge for wounded honour or out of jealousy, the agent has usually, before perpetration, brought himself up to action pitch by taking largely of bhang. In all other cases the abusive use of opium or its compounds is not usually apparent. The respectable portion of the Muhammadan community, I am aware, greatly deplore the love of "muddat," the use of which they assert to be largely on the increase, with very injurious consequences, amongst their women. But to say how far the use of this deleterious compound, or its kindred ones, has really spread, what damage, physically, intellectually, or morally, has resulted, and what action, if any, in the way of repression, is necessary on the part of Government, is quite beyond me to report upon with any fidelity. All data, either of the past or present, are entirely wanting. The question, with all the results that it leads to, is a most difficult and large one; it needs careful and prolonged inquiry before the facts elicited can be relied upon for the deduction of sound argument. Research in this direction among the populations of Europe by eminent men, who give it their time and thought, has hardly resulted in anything completely satisfactory; and if this be the outcome, where means and opportunities of investigation are so much more complete than they are in India, our Government can hardly be surprised if we fail in giving any satisfactory reply to the questions propounded to us.

2. In a book of reputation by Dr. Charles Elam, entitled "A Physician's Problems," there are some suggestive chapters on agencies* that, through abusive use, act on the nervous system, and tend to lower, both in body and mind, the tone of individuals indulging in them, and it is there further shown that the taste for indulgence on the part of parents is, in a large percentage of cases, transmitted to their offspring, with a strength that, theoretically considered, may not be irresistible, while practically it is so, blunting, in many cases abolishing, all moral sentiment, and impelling the unfortunates thus mentally diseased to the commission of crimes of all kind. In the various medical works, and returns, too, that one usually comes across, it is a ground of complaint that where increased indulgence in any one of the agencies above referred to becomes, for any reason, possible, there follows sooner or later an immediate increase in insanity. I have read, as an instance in point, that in Norway in 1825 the spirit duty was removed. Hence, subsequent to that date, the people there indulged more largely and freely than they formerly used to. The consequence is recorded that on the returns between that year and 1835, the increase of insanity, not to be accounted for in any other way, amounted to above 50 per cent. on the previous proportion, but the increase of congenital idiocy was 150 per cent., and I believe it is a well-established fact, taken from long observation in the asylums of Europe, that the larger proportion of the idiots and insane are the children of intemperate parents.

* Spirituous liquors, opium, ganja, bhang, muddat, and all such compounds.

3. Between the first forms of mental disease impelling to crime, either inherited or personally induced, resulting from intemperate indulgence in one or other of the enervating agencies that we are speaking of, and declared and unmistakeable insanity (when the State steps in to deprive the individual of liberty), there are varying degrees of intensity, which the law does not recognise, and which the magistracy, in the course of their investigations, for obvious reasons, cannot discover. Yet if these diseases in Europe are found by those competent to detect them very largely to affect the great majority of the criminal classes, and so may be said to be in a great measure the cause of crime, investigations in India would no doubt disclose that similar causes are having like effects, especially as climate and opportunity combine to induce indulgence. But till we have some certain data to go upon, I cannot see how officers can with any assurance advise the Government to repressive action, since they cannot tell where, how, or why, the line of indulgence should be drawn.

 4. I have

4. I have a belief that the opportunities of indulgence given under our rule are too great, and that they might with advantage be curtailed; but I can give no satisfactory reason for holding this belief beyond this, that likely to be well informed natives tell me that intemperance of all sorts is greater in these days than formerly, and I know that the consequences of intemperance are very disastrous. But how effectually to repress this tendency to intemperance is a question that, with the information at present before me, I cannot really advise upon. Reform in these matters, to be thoroughly effectual, should commence at home, and be independent of Government action, and can only come about from extended knowledge. To wait for this millennium, however, would be somewhat Utopian in idea. And yet if people have strong cravings, and are determined to indulge those cravings, the direct repressive action of Government would go but a small way in effecting good, for as soon as one source of supply is closed, or nearly so, the ingenuity of man usually at once devises another, the consequences of which, as a rule, are more hurtful. The history of indulgence and their attempted repressions points the moral that interference of Government requires to be most carefully considered. For we know that good intentions in repressing a known evil have frequently resulted, as I have said above, in calling into existence a greater.

No. 2094-64, dated 26 December 1871.

From Major *H. Szczcpanski*, B.S.C., Deputy Commissioner, Woon District, to the Commissioner, East Berar.

With reference to your No. 2820 of 1871, I have the honour to inform you that the report therein called for has been delayed by the tehsildars of Woon and Yeotmall, who failed to submit in proper time certain information called for from them

2. From official records, it appears that in this district there are 978 seers of ganja and bhang consumed in a year by 876 persons; but these figures do not truly tell the consumption, because a good deal of hemp is grown by consumers, of which we have not cognizance.

3. From inquiries made, it appears that ganja takes effect immediately, that the person taking it becomes insensible, and remains so for about three hours, and that he feels a sensation of heat.

4. Bhang does not take effect till about three hours after it is taken, the person remains under its influence about four or five hours, during which he is not wholly insensible, and feels a sensation of cold.

5. The general opinion is, "that the use of ganja and its preparations induce excitement, its protracted use inordinate excitement, and its abuse mental derangement."

No. 76, dated 11 January 1872.

From Lieutenant-Colonel *James Stubbs*, Officiating Commissioner, West Berar, to the First Assistant Resident, Hyderabad.

I have now the honour to reply to your letter, No. 1062, dated 31st October last, requesting information as to the extent to which the use of ganja or bhang produces insanity or excites to violent crime, also as to whether any action is considered advisable with a view to restricting the use of ganja and other preparations of hemp by enhancement of the duty on consumption, and limiting or entirely prohibiting the cultivation of the plant.

2. I must premise by stating that a copy of your letter, and of the enclosure which accompanied it, was forwarded to all Deputy Commissioners of this division

division for report after consultation with their native assistants or tehsildars, or the native gentlemen of their districts likely to be able to afford them any information.

3. I now annex copies of the replies received, which are singularly unanimous in opinion, that the preparations of hemp referred to are comparatively harmless, do not produce permanent insanity, do not incite to violent crime, and that their prohibition is neither necessary nor advisable.

4. The Assistant Commissioner, Bassim, states the effect is the reverse of exciting to violent crime or desperate acts, thus differing from the effects of ardent spirits or the various preparations of opium. When a person first indulges in the use of ganja and bhang, he becomes foolish and maddened for about three days; persons habitually given to their use are generally in a state of stupid depression.

5. The Deputy Commissioner, Buldana, cannot discover that any criminal has been induced to commit crime by taking bhang or ganja, and he is not of opinion that its use produces insanity. His Assistant, Mr. Taj-ud-din Hussain, whose opinion ought to be valuable, says these drugs are taken by the labouring poor as a means to lighten their daily work, and as a few plants of ganja can be grown in the enclosure of each hut, he doubts the possibility of restricting the use of the drug, in addition to which he thinks it harmless and unobjectionable.

6. The Deputy Commissioner, Akola, believes the use of ganja and bhang has the effect of undermining and destroying the constitution. It, he states, is used by the lowest classes, and is not conducive to crime; but criminals are in the habit of nerving themselves with this stimulant when they have determined to commit crime.

7. Nevertheless, it is an incontestible fact that all violent crime is, according to European ideas, at all events, preceded by smoking ganja. In a double murder recently committed in the Buldana district, a confessing prisoner states that, prior to the commission of the deed, they assembled under a tree, and sat down to smoke ganja, and Mr. Collins, the Officiating Superintendent of Police of the Buldana District, informed me that in all his experience he had never known a case of violent crime that was not preceded by smoking ganja; but it may very possibly be, as Captain Huddleston observes, that the ganja is smoked after the crime is determined on to bring the courage up to a certain point, in the same way that a stimulant of some kind is resorted to by criminals of all countries prior to the commission of offences.

No. 48, dated 4th January 1872.

From Captain *R. Huddleston*, Deputy Commissioner, Akola District, to the Commissioner, West Berar Division.

With reference to your office No. 4456 of the — ultimo regarding the use of ganja.

2. I have the honour to forward a copy of a report from the Civil Surgeon to whom I forwarded the correspondence on the subject.

3. Habitual ganja-smokers are no doubt indolent in habit, with constitutions more or less vitiated, sometimes almost imbecile, and of sickly appearance, with a peculiar expression in the eye, which renders them easily recognised. If, then, our criminals were generally of this class, or if violent crime emanated particularly from them, the fact would not remain hid.

4. The following are some of the effects :—

I.—Lips of the smoker get darker.

II.—Eyes show red lines in them.

III.—Temperament becomes silly and talkative.

 IV.—Asthmatic

IV.—Asthmatic and peevish.

V.—Constitution weak and sleepy.

VI.—Appearance light-coloured.

There is a common native idea that these smokers are exempt from the evils of miasma and impure water.

5. But I can hardly remember a case of any gravity where the crime could be traced to the effects of passion induced by ganja, though I can call to mind cases where the criminal having fully made up his mind to do the act, nerves himself with these preparations, lest his courage should fail him at the last moment. There is, however, a broad distinction between these two classes of cases, which is sometimes ignored, for it is clear that if ganja be unattainable in this stage of the affair, something else could easily be found to do its duty, and that ganja was by no means the cause of such offence.

6. Ganja is frequently mixed with poppy capsules and other plants, which, under the name of charas, is very inebriating. Bhang, on the other hand, is not so powerful. It is used when mixed up with certain condiments and sugar, as a "sherbat" or drink; or if mixed with ghee, it is eaten in the form of small cakes known as "majum."

7. To be more minute, ganja and bhang are the products of the same plant. It is sown in the month of July, and comes to full bearing in December and January. The leaves of the plant are called bhang, and the flowers ganja; the seeds are useless, but they are found sold mixed with the above two.

Ganja.—This is green and whitish in colour when parched; it is used for smoking only in one of the following ways:—

(1.) The general and mildest way of smoking ganja is first to take it on the palm of the left hand, and to mix it with water by rubbing it with the right hand thumb, adding a little less quantity of tobacco, then smoke in "chillum" with or without a pipe "hooka."

(2.) It is sometimes mixed with opium and prepared in the same manner, and then smoked;

(3.) or with the roots of kanere (sweet-scented oleander);

(4.) or with "dhatura" or *stramonium* seeds;

(5.) also with buchnag (aconite or moorkshood); and

(6.) with koochla or *nux vomica.*

Bhang—Is green in colour, and is used by people in various ways:—

(1.) It is pounded and turned into a drink.

(2.) It is dried, powdered, and eaten.

(3.) It is mixed with sugar and water and taken as sherbat, under the belief that it is cooling in the hot weather.

8. Drinking bhang is common among Marwarees and the people residing in Upper India.

The effects, though of the same nature as smoking, are not so sudden, strong, or lasting.

Some drink bhang as tending to excite the sexual passions, and women are said to use it in procuring abortion, but the manner of its exhibition is unknown to me.

Majum—Is prepared of ganja juice and sugar and fried in ghee, and formed into small cakes, which, however, produce much less effect than that of bhang and ganja.

9. It is believed that excess in the use of ganja and bhang is conducive to insanity, which is, however, generally only of a temporary and harmless type. The cases of mental aberration which come before the magistrates are almost invariably those where the disease has been present from birth or childhood, and therefore cannot have come from ganja or bhang.

10. Those

10. Those who indulge in these drugs belong to the lowest portion of the population, both Hindu and Muhammadan, who congregate in our towns. That crime should be more rife among such a class than with agriculturists is to be expected. Those are the great liquor-consumers, and if they cannot obtain exciting compounds in one way they will in another.

11. Therefore I should not condemn these compounds as being directly connected with crime; that is to say, they are no more the cause of offence than is the bazar liquor with which the Banjara is so often primed when he does highway robbery, or the beer and gin guzzled by the British rough before he beats his wife and assaults a policeman. The use of ganja and bhang is to be regretted, because like opium it always gets taken in excess, and it undermines and destroys the constitution. But I do not believe, it conduces to violent crime, nor is the abuse of it so great in this part of India as to necessitate the introduction of any special legislative measures.

No. 288, dated 23rd December 1871.

From Mr. Apothecary *J. V. Pitts*, Akola District, to the Deputy Commissioner, Akola District.

WITH reference to your endorsement No. 6260, dated 16th ultimo, bearing on the question whether the use of ganja or bhang produces insanity, I have the honour to submit the following report.

2. I have no personal experience on this subject, but it is my belief that if long persisted in, insanity will follow; this, however, is merely hypothesis; I cannot support it with facts within my own knowledge.

3. I am also led to believe that the indulgence of any or of all the various preparations of hemp excites to violent crime, and from what I have learnt from other sources, it seems that violent crime is invariably perpetrated whilst under its influence, and judging from the character of the natives generally, such supposition seems not altogether improbable.

No. 4146, dated 13th December 1871.

From the Deputy Commissioner, Buldana District, to the Commissioner, West Berar.

I HAVE the honour to acknowledge the receipt of your No. 4457 of the 4th November 1871, with enclosures, on the subject of ganja or bhang.

I beg to enclose translation of a report on this subject from Mr. Iajoodeen Hoosain, whose experience as a magistrate and acquaintance with the habits of the people here and elsewhere in India should make his opinion valuable.

The Tehsildars of Maikur and Mulcapoor do not consider that the use of bhang or ganja produces insanity or induces to violent crimes.

None of these officers ever have observed in their experience that any criminal has been induced to commit crime by taking bhang or ganja, and I cannot record any instance of the kind in my own experience.

Translation of a Report from Mr. *Iajoodeen Hoosain*, Assistant Commissioner on the Subject of Ganja and Bhang.

There is little manufacture of ganja and bhang in Berar, and especially in the Mulcapoor Taluq, except in some villages such as Doodola, Shelgaum, Duhigaum, and Soolatu, &c. The hemp crop is not cultivated so abundantly as the other crops are; bhang is not at all produced in this part of the

country: bhang is abundantly produced and sold in Northern India. In this part of the country, the leaves of the ganja tree are used as a substitute for bhang; ganja in this part of the country is used by gosavees, faquirs, ascetics, mendicants, and labouring classes of people. The cause for which it is used is that it is not costly, and besides a very small quantity has the power of producing its effect on the person using it; but not making him so senseless as to induce him to commit a crime; on the other hand, its users continue to work as long as they are under its influence, and it makes them feel their labour light It is a means, I should say, of assisting them in gaining their livelihood. The users of ganja suffer in their old age from cough or asthma, and they have a shrivelled and dried-up appearance. The reason of this is that they lose their strength, being bent under the load of years, and in this state they cannot labour, and consequently with difficulty they earn their livelihood. For the users of ganja tonics require to be used to lessen its influence; but as the poor could get no tonics in their old age owing to want of money, as they continued to use it longer to preserve their strength, they suffer from cough, &c. They are not required to spend money for ganja, as they can plant its tree in the enclosure of their house, and it serves them for the whole of the year. If the use of ganja be called a vice, we scarcely meet with such cases in which a person being intoxicated with ganja, has caused a hurt or injured any person. Bhang is used by gosavees. faquirs, Marwaris, sahookars, and others. It is not used always, but only in hot seasons, as a cooling substance. It is prepared with the mixture of milk, sugar, and other spices. Gosavees, &c., call it *Mahadeo's Bootee*, and some people, except Marwaris, offer it first to their gods and then take it as their "persad"—remnants.

These are the kinds of uses of ganja and bhang.

On enquiry with the contractors of opium, ganja, and bhang, I came to know that muddat, a substance made from opium, and now-a-days brought in use, is much more used than ganja and bhang. There seems no good from the use of muddat; but on the other hand, it reduces the health of a young person, and absorbs the whole blood from his body.

In my humble opinion, I see no disadvantages from the use of ganja and bhang; but, on the contrary, I see them in the light of producing some good to their user. I also do not think that the use of ganja or bhang would be altogether restricted, though the duty on them be enhanced, or their produce be very much limited. If their cultivation be restricted, it will be afterwards observed that the persons, who are quite given up to their use, have planted some plants in the enclosures of their houses, and if they be prosecuted on this account, the Criminal Courts will have much work imposed on them. If the duty be enhanced, those that are addicted to the practice will sell anything they have to satisfy their craving.

No. 2335, dated 18th December 1871.

From Captain *C. O. Mayne*, Assistant Commissioner, in Charge Bassim District, to the Commissioner, West Berar.

In reply to your docket No. 4458 of 4th November 1871, I beg to report as follows on the preparations of hemp called ganja and bhang, and their effects on the human frame.

2. It may be interesting if I state the mode of preparation in these parts.

Ganja.—The leaves of the plant are picked, and the seeds and stalks separated from them. The leaves are then washed in three or four waters, and the moisture pressed out; equal quantities of tobacco are then mixed with the leaves and small quantities are generally mixed up in the palm of one hand with the thumb of the other; a ball, the size of a walnut, is made and then smoked by the manufacturer in his hooka.

Bhang.—The leaves of the plant are picked according to the quantity required; the leaves are then pounded well with a stone and mixed with water.

About

About a handful of leaves to a lota full of water will generally make a man very drunk. This is the ordinary way of drinking it. Men of high caste and epicures mix cocoanut, poppy-seed, milk, plantains, sugar, and various spices according so taste. A mixture is sold by the bunniahs for the purpose called "bhang masala."

3. As to the effect on the human frame, I am of opinion, after much enquiry, hat generally the effect is the reverse of exciting to violent crime or desperate acts, differing from the effects of ardent spirits and the various preparations of opium. When a person first indulges in either of these preparations (for the effects of both are much the same), he becomes foolish and is maddened for about three days. The tongue becomes dried up, and excessive thirst ensues. The feeling is described as being lifted off the earth. Persons habitually given to these preparations are generally in a state of stupid depression and sit with their eyes cast down. The effects, though intoxicating, are very depressing and give rise to nervous fears and sudden frights, people often quivering with fear without any cause. Persons who constantly indulge in the drug have a haggard stupid expression, easily detected, and talk loudly.

4. The persons most given to smoking the drug are faquirs, gosains, and byragees. Some people accustom themselves to smoking the drug three times a day—at sunrise, mid-day, and sunset; others smoke it at all hours.

5. Marwaris are much given to drinking "bhang." It is supposed to be cooling in the hot weather. The habit of either drinking bhang or smoking ganja is very difficult to leave off when once commenced.

6. Bhang is also taken by immoral people as an "aphrodisiac" as tending to excite the sexual passions. Preparations of hemp are also much used by women for the purpose of procuring abortion.

7. There is another method of using the leaves of the plant, that is, mixing it up with jowaree gruel. It is then called *bhaja*.

8. A sweetmeat named *majum*, also manufactured from ganja, produces an intoxicating effect.

9. The preparations of opium, *muddat*, *chandu*, and koosumba, are more calculated to produce effects which tend to cause violent crime than ganja and bhang, the preparations of hemp.

No. 226, dated 30th December 1871.

From Major *A. H. Millett*, Inspector General of Police, Hyderabad Assigned Districts, to the First Assistant Resident, Hyderabad.

ADVERTING to the Second Assistant Resident's reminder No. 2191, dated the 15th instant, I have the honour to forward, for submission to the Resident, the following report relative to the abuse of the several preparations of hemp, which was called for in the Second Assistant Resident's letter No. 1063 of the 31st October 1871.

2. I regret that although on the 9th ultimo I called for the opinions of three officers in district police charge on this question, I have only received one report from the District Superintendent of Police, Woon.

3. A copy of Mr. Cumberlege's report is annexed to this letter.

4. My own observations in this part of India do not warrant my condemning the use or abuse of ganja and bhang to the same extent as I think I should have been prepared to do in connexion with the natives of the Punjab and Hindustan.

5. I cannot from my own experience say that the use of ganja or bhang in these parts is a common incentive to crime, nor do I believe that its ordinary use leads to insanity otherwise then temporary.

6. Rahtores and others from Rajputana are certainly addicted to the use of the drugs mentioned, and there is reason to believe that before engaging in any offence requiring much animal courage, persons of those classes prime themselves with charas, bhang, or ganja. So far the drugs mentioned are, I believe, much abused, and, as I know of nothing in their favour (excepting when they are used purely as medicines), and I cannot satisfactorily determine even that point in their favour, I am quite sure that some restriction on the use of the plant would have a salutary effect.

7. The drug, or rather the preparation, which seems to me to demand particularly restrictive measures in Berar, is "muddat" (properly called "Muddhk"), which is greatly used by the Mahomedans and by very many Hindus and low caste persons throughout these districts.

No. 406, dated 13th November 1871.

From *N. R. Cumberlege*, Esq., Superintendent of Police, Woon District, to the Inspector General of Police, Hyderabad Assigned Districts.

I HAVE the honour to acknowledge receipt of your endorsement No. $\frac{2590}{215}$, dated 7th instant, forwarding copies of certain letters regarding the abuse of the preparation of hemp and its excitement to crime.

2. I have just replied to a similar endorsement received from the Deputy Commissioner of this district.

3. I am not prepared to offer any opinion regarding the extent to which the use of ganja or bhang may tend towards producing insanity or excite to violent crime, because it is the first time I have considered the subject in this light; but I always thought that bhang had rather a soothing effect on the nerves, and was less calculated than spirituous liquors to excite the consumer to the commission of crime. A temporary stupor was, I thought, the result of the abuse of this preparation, and never having studied the subject as it is here put, I am certainly not in a position to offer any remarks whatever.

4. Ganja, bhang, muddat are abused very much in Berar, and the abuse of any stupefying drug or preparation would necessarily affect the consumer perniciously, the brain would certainly suffer in time, and the abuser of these preparations very soon discovers unmistakable signs known to us all. For instance, the bhang and muddat abuser gradually seems to waste away, he becomes so thin that the very sight of some of these men is exceedingly painful, whilst any attempt at suddenly restricting his allowance causes a determined diarrhœa. The ganja-smoker, too, is a deplorable sight before he obtains his morning pipe, troubled with nausea and a headache, and showing all the signs of extreme general debility. It would certainly be easy to understand such, and one could in time so poison his brain as to show a certain softening of his reasoning faculties, and the step onwards is not too wide from this to insanity, to make the idea that such may result from the abuse of ganja anything but a very reasonable deduction. Anyway, as I have not taken up this subject as it is now presented, anything I might offer in the way of remarks could only be surmises which have not been verified in any way by close enquiry into the subject itself.

6. That anything like an enhancement of duty on all drugs, whether preparations of hemp or opium, would be beneficial to police working, I am hardly called on to affirm, because this would seem the only deduction tenable and too clear a fact to call for any disputation on this point.

6. I regret I am unable to offer an opinion on the points mentioned in the correspondence above referred to.

No. 2357, dated 6th November 1871.

From the Sanitary Commissioner, Hyderabad Assigned Districts, to the First Assistant Resident, Hyderabad.

I HAVE the honour to acknowledge the recipt of your Letter No. 2372, dated 31st ultimo, with enclosure, and in reply to state that there are no officers subordinate to me from whom I could get the information required.

2. The records of insanes treated in the lunatic asylums in India show the supposed cause of insanity in each case. An analysis of these tables, "Causes of Insanity," will show the number of cases of insanity attributable to the use of hemp.

3. It is generally said, and I believe with much truth, that when a man "runs amuck" or a female commits "suttee," that before committing the act they are intoxicated by the use of hemp in some form or other.

No. 725-65, dated 3rd May 1872.

From Lieutenant *Crawford B. Cook*, Officiating Assistant Secretary to the Chief Commissioner, British Burma, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I AM directed to acknowledge the receipt of your letter No. 345, dated 10th October 1871, requesting that investigations may be carried out in order to ascertain, as far as possible, the effects of the use or abuse of ganja and the several preparations of hemp, and their alleged influence in regard to exciting to violent crime.

2. In reply I am directed to submit, for the information of the Government of India, a copy of correspondence as per accompanying list, containing the opinions of the most experienced officers in the province on the subject. Ganja is very little used by the Burmese, and what consumption there is in British Burma is almost confined to coolies and immigrants from India.

3. With reference to paragraph 5 of your letter under acknowledgment, I am directed to attach an extract* of the Excise Report for 1870-71, which contains the Chief Commissioner's views at length as regards the small amount of revenue derived from the privilege of retailing ganja in this province, and the possible advantage to the country, if its consumption were absolutely stopped :—

* Paragraph 13.

1. No. 469-502—269, dated 8th November 1871, from Secretary to Chief Commissioner, to Commissioners and Heads of Departments.

2. No. 1664, dated 4th December 1871, from Deputy Inspector General, Indian Medical Department, to Secretary to Chief Commissioner.

3. No. $\frac{114}{B.\ L.\ R.}$, from Superintendent, Lunatic Asylum, Rangoon, to Secretary to Chief Commissioner.

4. No. 1790, dated 11th December 1871, from Inspector General of Police, to Secretary to Chief Commissioner.

5. No. 33, dated 19th December 1871, from Commissioner, Tenasserim, to Secretary to Chief Commissioner, with five enclosures.

6. No. 10, dated 13th January 1872, from Commissioner, Arakan, to Secretary to Chief Commissioner, with six enclosures.

7. No 1808, dated 19th January 1872, from Inspector General of Police, to Secretary to Chief Commissioner.

8. No. 65, dated 25th January 1872, from Commissioner, Tenasserim, to Secretary to Chief Commissioner, with two enclosures.

9. No. 249-13, dated 8th February 1872, from Commissioner, Pegu, to Secretary to Chief Commissioner, with nine enclosures.

10. No. 208, dated 12th March 1872, from the Inspector General of Prisons, British Burma, to Secretary to Chief Commissioner of British Burma.

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* Thirteen are returned as uncertain and unknown.

No. 469-502—269, dated 8 November 1871.

Circular by Lieutenant *C. B. Cooke*, Officiating Assistant Secretary to Chief Commissioner, British Burma.

COPY of Letter, No. 345, dated 10th October 1871, from the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce (*see* page 1), the above forwarded to Commissioners of Divisions, Inspector Generals of Police and Prisons, Deputy Inspector General of Hospitals, Indian Medical Department, Pegu Division, and the Superintendent, Lunatic Asylum, Rangoon, with a request that a report upon the subject referred to may be submitted at an early date.

No. 1664-71, dated 4 December 1871.

From the Deputy Inspector General, Indian Medical Department, Pegu Division, to the Secretary to the Chief Commissioner of British Burma.

I HAVE the honour, with reference to your No. 501-269, General Department, Miscellaneous, dated 8th November 1871, attached to Letter No. 345, dated 10th October 1871, from the Secretary to the Government of India to the address of the Chief Commissioner, British Burma, regarding the alleged action of the abuse of ganja in the production of insanity, and other dangerous effect, to state that:—

2. The ordinary physiological effects of charas, ganja, bhang or subjee or sidhee-majum and hashisch are too well known to need repetition or detail —their "*vis. narcotica, phantastica, dementans*" point only to their reputed power to produce a singular kind of insanity of temporary duration, but they are known to excite at times to acts of violence, and the *adut* smoked by the Malay when preparing to run "amok" is a preparation of hemp and opium.

3. That the inordinate and protracted use or abuse of the above preparations of hemp lead to confirmed insanity under certain conditions can scarcely admit of doubt. Among 112 insanes in the lunatic asylum at this station six cases are traced to this cause, and of 17 military insanes transferred from regiments at out-stations in Burma to the Garrison Detail Hospital, *en route* to Madras, during the last five years, two are returned by the Regimental Medical Officer as due to the abuse of bhang and ganja, and it is probable that more care* might have traced some of the other cases to the same cause.

4. I regret having no personally-recorded data at hand, but extended excessive use of the preparations of hemp is not inactive with natives in the causation of confirmed mental disease; yet it appears doubtful if it is a more frequent cause of this class of diseases in India than is the intemperate use of alcoholic preparations, of many of the effects of which it appears to partake, in Europe; but no reliable data exist to decide even on the broad question of insanity, and still less in special questions, whether the proportion of insanes in Asia is similar or otherwise to those in Europe.

P.S.—There still exists an old Chinese work translated into French, and perhaps into other languages, wherein it is made to appear that *chanvre* (hemp), or *mayo* as it is also termed, was used in China in the third century of the present era as an anæsthetic. There is, however, no mention of its action, remote or exciting, in producing insanity.

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* Thirteen are returned as uncertain and unknown.

No. 114–R. L. H., dated 1871.

From Surgeon *H. Griffith*, in Medical Charge, Lunatic Asylum, Rangoon, to the Secretary to the Chief Commissioner of British Burma.

I HAVE the honour to submit a copy of a letter addressed to the Deputy Inspector General of Hospitals, Indian Medical Department, Pegu Division, on the extent to which the abuse of ganja produces insanity and other dangerous effects.

No. 113, dated 26 November 1871.

From Surgeon *H. Griffith*, Superintendent, Lunatic Asylum, Rangoon, to the Deputy Inspector General of Hospitals, Indian Medical Department, Pegu Division.

WITH reference to No. 1504–71, dated 10th November 1871, anent the extent to which the abuse of ganja produces insanity and other dangerous effects, I have the honour to submit that, during a residence of five years in the Central Provinces, I found that the practice of smoking ganja was very common in all the districts, and I had excellent opportunities when in charge of a central jail there of witnessing its effects.

2. A report, however, to be of any value should be illustrated with cases and statistical tables, and as I do not now possess these I can only give my experience succinctly from memory.

3. I do not think that a moderate use of the drug does in all instances, as I have heard it asserted, induce mental habitude and premature old age, but the habitual abuse of ganja must undoubtedly ruin the health and permanently weaken the mental faculties.

4. A very important question connected with the use of this drug is that of the deleterious effects resulting from altogether and suddenly abandoning its use after a long practice and when the system has become habituated to it.

5. That the sudden prohibition of the usual dose of ganja produces intense langour and anxiety for a time and frequently œdema, diarrhœa, and other troublesome symptoms is well known to all who have held medical charge of gaols in this country; but I believe that medical men are very often misled by the sufferers greatly exaggerating these symptoms in hopes of being indulged with the accustomed doses, and that more weight has been attached to these symptoms by them than they really deserve.

6. My experience proves that bad effects from a sudden and complete prohibition of the drug may only be expected in persons who have been enfeebled by age or disease, and when suffering from the depressing effects of serious injury, and that it is never necessary to reduce the accustomed dose gradually, and shortly after admission the health of the most confirmed ganja smoker invariably improved under enforced abstinences.

7. I found that when men had become thoroughly accustomed to the use of the drug, that there was less likelihood of its producing insanity and other injurious results, provided the quantity taken was not large, and in almost every case I can remember, there are six now in the asylum, mental derangement occurred in those who took large quantities at the commencement. With them there invariably occurred a species of insanity closely resembling delirium tremens; indeed, the after effects of ganja much resemble those symptoms produced by alcohol; the actual attack of insanity often follows upon a debauch of more than usual extent of duration, and I have known it ushered in by a fit of epilepsy.

8. In some who are strongly predisposed by their constant abuse of ganja, it follows upon some accident or shows itself during the treatment pursued for

the relief of some bruise or fracture, showing that the nervous system is seriously injured.

9. In no two patients is insanity from this cause ushered in or continued with precisely the same appearance, for the different propensities and habits of different patients lead of necessity to a difference of idea and of expression in each. The precursory symptoms of a paroxsym are, however, very frequently as follows. The patient is strongly affected by every emotion or passion of the mind, he becomes distrustful, is very fretful and irascible on slight occasions, he is subject to a kind of uneasiness which he cannot describe or account for, experiences a degree of fear, and feels either little disposition or absolute incapacity to sleep.

10. The recoveries from mental disorders induced in this way are numerous

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No. 1790, dated 11 December 1871.

From Major *H. Duncan*, Inspector General of Police, British Burma, to the Assistant Secretary to the Chief Commissioner of British Burma.

In reply to your Docket No. 499–269, of 8th November, and reminder of the 7th instant, reached to-day, I have the honour to state, that from the districts of Toungoo, Amherst, Rangoon, Tavoy and Thayetmyo, I have received reports from the superintendents of police to the effect that they are aware of no instances where the cause of crime has been the excitement consequent on the abuse of ganja or bhang.

Indeed, these drugs are not used by the Burmans, although they are by natives of India in the seaport towns.

The reports from other districts will be communicated as soon as received.

No. 33, dated 19th December 1871.

From Colonel *D. Brown*, Commissioner of the Tenasserim Division, to the Chief Commissioner of British Burma.

With reference to your Docket No. 498–269, General Department (Miscellaneous), calling for report on the effects of ganja, I have the honour to forward herewith the reports I have received from the district officers of this division (excepting Shwe-gyen and Mergui) and from the Civil Surgeon, Maulmain. It appears that ganja is not largely used here; its pernicious or deleterious effects on the brain cannot therefore be so well tested as in India. As far as I know there has not in this division been a case of dementia produced by the use of ganja, nor has the use of it tended to the increase of crime.

No. 266, dated 28th November 1871.

From *J. K. Macrae*, Esq., Magistrate of Maulmain, to the Commissioner of Tenasserim Division.

The undersigned has the honour, in reply to your Docket No. 193, dated 17th instant, to report that the use of bhang or Indian hemp is very small in this town, and that he has not heard of an instance in which it was known to induce madness or cause violent crime.

No. 98, dated 18th December 1871.

From *George Marr*, Esq., M.D., Civil Surgeon of Maulmain, to the Commissioner of the Tenasserim Division.

WITH reference to your Docket, No. 239, dated 9th instant, forwarding copy of Circular No. 345 from the Secretary to the Government of India, I have the honour to report:

(1.) That I am not acquainted with any case in which the abuse of ganja or its preparations had produced insanity, neither am I aware of any instance in which it has excited to violent crime.

(2.) That its effects, when indulged in for a length of time, are, as far as I have observed, similar to those of opium, viz., in inducing emaciation and ultimately diarrhœa and dysentery, which terminate fatally.

(3.) Mr. Innez, late ganja farmer of this town, states that he has not observed any ill effects from its use, other than those above mentioned. The consumption of ganja in Maulmain he states to be on an average about ½ viss, *i.e.*, 1¾ lbs., per day; that about 500 persons in Maulmain are in the habit of using the drug, and that these are almost entirely Mussulmans, both of Madras and Bengal Presidency, a few Coringees and Madrassees, and no Burmese of the town; the average daily consumption per man Mr. Innez states to be 1 pie weight, equal to about 3 drachms avoirdupois.

No. 69, dated 22 November 1871.

From Colonel *E. M. Ryan*, Deputy Commissioner of the Amherst District, to the Commissioner of the Tenasserim Division.

WITH reference to your Circular Docket in this Department, No. 193, dated 17th instant, I have the honour to report that the decoctions from ganja and bhang are not used by the Burmese, its use being confined to the natives of India, the number of whom are few in the district.

I am, however, informed on inquiry that excessive use of ganja renders a person liable to insanity; but not a single case has been brought to my knowledge that such insane persons are more dangerous or more liable to commit violent crime than any other insane person.

No. 567, dated 27 November 1871.

From Lieutenant-Colonel *E. J. Spilsbury*, Deputy Commissioner of Tavoy, to the Commissioner of the Tenasserim Division.

WITH reference to your General Department Circular Docket, No. 193, of the 17th instant, I have the honour to report that the use of ganja has ceased in this district from the year 1865-66, and bhang is not known here, consequently I am unable to furnish the information called for.

No. 172–24, dated 6 December 1871.

From Major *M. B. S. Lloyd*, Deputy Commissioner of Toungoo, to the Commissioner of the Tenasserim Division.

I HAVE the honour to acknowledge receipt of your Circular Docket, No. 193, dated 17th November 1871, forwarding copy of Letter, No. 345, dated 10th October 1871, from A. O. Hume, Esq., C.B., Secretary to the Government of India, Department of Agriculture, Revenue and Commerce (General).

2. I think I am right in stating that the indigenous people of the country never touch ganja or any of its preparations.

3. I have seen a few natives of India suffering from the effects of an excessive use of this drug, but they have all appeared to me to be more eccentric than excited, wearing peculiar clothes, their hair matted together.

4. I have never, as far as I remember, had to dispose of a case against a native of India as a criminal, and found that he had been excited to commit a violent crime through the use of ganja.

5. I am very certain that no person would take ganja to excite him to commit a particular crime—its first stage is to cause quarrelling and consequently often sudden fighting, the next is to lead a man under its influence to suppose that the earth is opening under him, or that the roof of the house is falling in.

6. As regards bhang, I have not sufficient experience of its effects to venture an opinion. It is not used by Burmans.

No. 10, dated 13 January 1872.

From Colonel *J. F. J. Stevenson*, Commissioner of Arakan, to the Secretary to the Chief Commissioner of British Burma.

IN submitting the following précis of reports upon the effects of ganja, as directed in your Letter No. 496–269 of the 8th November last, I have the honour to add for myself that I believe that, like many other drugs, as well as stimulants, it has its uses as well as its abuses. Some people are the better for using it—a few the worse. The several reports are herewith sent.

Deputy Commissioner, Akyab, No. 342, dated 8th January 1872.

Is not in possession of facts to show that the effects of indulgence in ganja are attended with very fatal results.

Deputy Commissioner, Ramree, No. 196, dated 25th December 1871.

Cannot say much from his own personal experience, but has always heard that the use of ganja, bhang and other preparations of hemp is very deleterious, producing insanity and inciting to violent crime.

Officiating Magistrate, Akyab, No. 312, dated 1st December 1871.

Ganja affects persons who are in the habit of taking it in much the same way as opium; but a novice becomes uproarious under its effects, which last several hours. Does not think that its alleged influence in exciting to violent crime is on a par with opium, or that it has any special influence.

Dr. Mountjoy, Civil Surgeon, Akyab, No. 68, dated 12th December 1872.

The effects produced by ganja when taken regularly have not come under his observation.

Deno Nath Doss, Sub-Assistant Surgeon, Akyab, No. 67, dated 28th November 1871.

Is acquainted with several persons who habitually indulge in ganja-smoking, but has not seen one among them who has suffered from insanity in any of its forms, specially that formidable form called mania—raving madness; on the contrary, he has found some of them are "very witty," and some may be made to work much harder without grumbling than others who do not indulge in it. But he adds that ganja makes the temper irritable.

States

States that both ganja and bhang produce insanity, and that they also tend to excite to violent crimes. Adds that during his long medical service he has had frequent opportunities of eliciting by enquiry from transported prisoners, natives of Hindustan, that most of the acts of Mutiny of 1857 were undertaken under the influence of bhang, charas, or ganja.

Dr. Alexander Thomas, Civil Medical Officer, Kyouk-Thyoo, No. 66, dated 13th December 1871.

No. 342, dated 8 January 1872.

From *W. DeCourcy Ireland*, Esq., Deputy Commissioner, Akyab, to the Commissioner of Arakan.

THERE are four shops in the district, three at the Nâf and one at Akyab.

The farmer imported during the year 1871 16 maunds only.

The consumption of ganja is not very great, and is almost entirely confined to natives of India.

I am not in possession of any facts tending to show that the effects of indulgence in the drug are attended with very fatal results.

No. 196, dated 25 December 1871.

From Lieutenant-Colonel *C. P. Hildebrand*, Deputy Commissioner of Ramree, to the Commissioner of Arakan.

WITH reference to your Endorsement, No. 125-A, dated 20th ultimo, forwarding copy of a letter from the Secretary to the Government of India, on the subject of ganja, I have the honour to state that I cannot say much on the subject from my own personal experience, but I have always heard that the use of ganja, bhang, and other preparations of hemp, is very deleterious, producing insanity and inciting to violent crime. The plant is not much cultivated in this country, nor are the Burmese or Arakanese much addicted to the use of it. But it is a good deal used by the natives of India who come to Burma. I would certainly recommend that in British Burma the sale of all preparations of hemp be confined to sale for medical purposes only. I would also recommend that its cultivation in British Burma be prohibited.

I enclose a copy of a letter I have received on the subject from the medical officer here.

No. 66, dated 13 December 1871.

From *Alexander Thomas*, Esq., Medical Officer of Kyouk-Phyoo, to the Deputy Commissioner of Ramree.

WITH reference to your Memorandum, dated 11th December 1871, calling for report on the subject of ganja and bhang, I have the honour to state that both these drugs produce insanity if long continued, and that they also tend to excite to violent crimes; and in illustration of this I beg leave to quote an ancient Sanscrit saying, "*Oogroprociety*," which means that all such who are consumers of ganja are easily given to a destructive propensity. I have had during my lengthened medical service frequent opportunities of eliciting by inquiry from the natives of Hindustan who have been sent here as transported life-prisoners that most of their bloody work was undertaken whilst under the influence of bhang, charas, or ganja, and have, moreover, heard that many of the acts of Sepoy insubordination owe their origin to ganja; indeed, this drug is said to have been largely brought into play at the time of the Sepoy Rebellion

in 1857 to infuriate the men. I have observed in all smokers of the ganja dyspepsia to be very common, and in course of time the lungs of such become affected, and not unfrequently end in phthisis and hæmoptysis; palpitation of the heart is a frequent complaint with them.

In conclusion, I respectfully beg to say that a prohibition to the cultivation of the plant would be a boon to India.

No. 312, dated 1st December 1871.

From *Henry Buckle*, Esq., Officiating Magistrate of Akyab, to the Commissioner of Arakan.

In reply to your Docket, No. 126-A, Abkari, dated 20th November, calling for a report on the use and effects of ganja, I have the honour to state that, from inquiries I have made, the use of ganja in Akyab town seems to be almost exclusively confined to Bengalees. It affects persons who are in the habit of taking it in much the same way as opium; but a novice becomes uproarious under its effects, which last several hours.

2. Regarding the alleged influence of ganja in exciting to violent crime, I do not think it is on a par with opium, or that it has any special influence.

No. 68, dated 12th December 1871.

From *W. J. Mountjoy*, Esq., Civil Surgeon of Akyab, to the Commissioner of Arakan.

In reply to Letter No. 345, I am unable to give any information regarding the effects of ganja. The medicinal properties of ganja are of course well known, but the effects produced by the herb when taken regularly have not come under my observation. When I first came to Akyab, many years ago, ganja was scarcely known in the province, but of late years it seems to me the use of the herb, as well as opium, is far more widely spread amongst the people. It appears to me that a native gentleman would be able to make a better report on this particular subject than a European surgeon could possibly do, so I asked the sub-assistant-surgeon, Mr. Deno Nath Doss, to oblige me with his ideas on the drug. That officer's Report I have now the pleasure to forward to the Commissioner of Arakan.

No. 67-A, dated 29th November 1871.

From *Babu Deno Nath Doss*, Sub-Assistant Surgeon of Akyab, to the Civil Surgeon, Akyab.

I have the honour to acknowledge the receipt of a copy of a Letter, No. 345, dated 10th October 1871, from the Secretary to the Government of India to the address of the Chief Commissioner, British Burma, enquiring whether the abuse of ganja or bhang (the dried leaves of the plant) leads to insanity and other acts of violence.

I have been acquainted with several persons who habitually indulge in ganja-smoking, but I have not seen one among them who has suffered from insanity in any of its forms, especially that formidable form called mania (raving madness), in which he talks most incoherently, and shows a great tendency to do violence to himself and to others. On the contrary, I have found some of them are very witty, and some may be made to work much harder, without grumbling, than others who do not indulge in it. If a habitual indulger of ganja

ganja is also an insane, it is, I believe, a mere coincidence, but not a causation; *i.e.*, the smoking of ganja is not the cause of insanity, but that insanity would have come on independent of it, as it often does, from multifarious other causes. Smoking of ganja, however, I must say, when carried to excess for a good length of time, produces dulness of intellect and a carelessness to everything that is conducive to his interest. It also makes the temper irritable.

Confirmed smokers of ganja, it appears, die more generally from dysentery than from any other disease.

Medicinal Effects of Ganja or Bhang.

It is often administered in the form of tincture of ganja, extract of ganja, or bhang, pounded on a common curry-stone and dissolved in water. In speaking of the uses and actions of ganja, or bhang (the dried leaves of it), I speak only of those which I have gathered from my own personal experience.

(1.) It sharpens the appetite very much, so that a person can eat a quarter, if not half, the quantity more than his ordinary diet, without any subsequent bad consequences. Inclination for eating sweets is greater than for meat.

(2.) It produces a pleasant reverie; a variety of pleasing objects in rapid succession rise and vanish, to be followed, after a momentary interval, by other objects equally agreeable.

(3.) It invariably brings on sleep. I have seen, in cases of *delirium tremens*, where morphia failed to act as a hypnotic, tincture of hemp, or ganja, induced sleep.

(4.) It is an aphrodisiac. When continued for a few days it excites venereal desires.

(5.) It is an antispasmodic. I have cured puerperal and idiopathic tetanus by its use only, and I have given it in cases of neuralgia with success.

(6.) It causes a cheerful state of mind, causing the people not in the daily habit of using it to sing and laugh. During the Durga Puja holidays, the day the goddess is thrown into the river, it is customary with all Hindus in Bengal, males and females, to drink bhang, being a ready exciting cause of merriment. While they are under its influence they sing and fall into repeated fits of laughter, which end in profound sleep, without any bad result worthy of notice.

(7.) Tincture of hemp and solution of bhang are slightly astringent.

No. 1,808, dated 19th January 1871.

From Major *H. Duncan*, Inspector General of Police, British Burma, to the Assistant Secretary to the Chief Commissioner of British Burma.

In continuation of my Letter, No. 1,790, of 11th December 1871, I have the honour to inform you that from the superintendents of the remaining districts in the province I have reports to the effect that they are aware of no instances where the perpetration of crime has resulted from the abuse of ganja.

No. 65, dated 25th January 1872.

From Colonel *D. Brown*, Commissioner of the Tenasserim Division, to the Secretary to the Chief Commissioner, British Burma.

I HAVE the honour, in continuation of my Letter, No. 33, of the 19th December last, to forward two copies of Reports* I have received from the Deputy Commissioners of Shwe-gyen and Mergui, regarding the alleged action of the abuse of ganja in producing insanity.

* No. 74-5, dated 15th December 1871.
No. 69, dated 17th January 1872.

No. 745, dated 15th December 1871.

From Major *A. G. Duff*, Deputy Commissioner of Shwe-gyen, to the Commissioner of the Tenasserim Division.

WITH reference to your Circular (General, Miscellaneous), No. 206, of 9th instant, I have the honour to state that the use of ganja, or other preparations of hemp, in this district is, if any, so small that no evil effects have apparently ever resulted from it. The Civil Surgeon here reports that, during a practice of five years, not one case of the use of either has ever come to his knowledge.

No. 69, dated 17 January 1872.

From Major *W. Munro*, Deputy Commissioner of Mergui, to the Commissioner of the Tenasserim Division.

I HAVE the honour to acknowledge receipt of your General Department, Miscellaneous, Circular Docket, No. 193, of 17th November (received 20th December), and in reply I have the honour to inform you, that from inquiries made, I find the Mahomedan portion of the community of Mergui use ganja, but not to any great extent; as they do not use it to excess, bad results are not produced in this district among the Mussulman population, nor has it tended to increase of crime. Small quantities of hemp are occasionally grown by the Shans in their toungyas, but is, I am informed, generally used by them for medical purposes; occasionally, however, they do smoke it. The Burmese do not use ganja, and the Chinese prefer opium.

As far as this district is concerned there is no necessity for action on the part of Government in the matter.

No. 249-13, dated 8 February 1872.

From Colonel *R. D. Ardagh*, Commissioner of Pegu, to the Secretary to the Chief Commissioner, British Burma.

IN reply to your Docket No. 497-269 of the 8th November last, on the subject of the effects of the use or abuse of the several preparations of hemp.

2. I submit papers as follows:—
From Magistrate, Rangoon, No. 13 of 19th January 1872.
From Superintendent,* Lunatic Asylum, dated 26th November 1871.

From

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* *See* page 31.

From Deputy Commissioner, Bassein, No. 187–6, dated 12th December 1871.

From Civil Surgeon, Bassein, No. 129, dated 11th December 1871.

From Deputy Commissioner, Myanoung, No. 100-4, dated 12th December 1871.

From Medical Officer, Henzada, No. 244, dated 12th December 1871.

From Deputy Commissioner, Prome, No. 6–5, dated 10th January 1872.

From Deputy Commissioner, Thayetmyo, No. 296–4, dated 3rd January 1872.

From Medical Officer, Thayetmyo, No. 61, dated 22nd December 1871.

3. These set forth what is known and has been observed of the effect of ganja and bhang on the human system in this province.

4. As a rule the Burmese of the country are not addicted to it. They prefer, when they use drugs, opium and its preparations, which they can get at the licensed opium shops.

5. The ganja and bhang shops are, as you will find noted in some of the letters, almost entirely for the accommodation of natives of India.

6. That its use degenerates often into abuse, and that an excessive indulgence in it induces mania, will be gathered from the medical reports; and it is also a fact commonly received that natives of India under the influence of bhang or ganja are in a state of mind which excites them to the commission of crimes attended with violence, but from its small consumption in this division such cases are rare here.

7. There does not appear to be any necessity for prohibiting the cultivation of the plant here. What is consumed is chiefly imported. The sale also to consumers has hitherto been limited, licensed farmers not being allowed to vend more than 5 tolahs weight at one time to any purchaser.

No. 13, dated 19 January 1872.

From Captain *R. C. Evanson*, Officiating Magistrate of Rangoon, to the Commissioner of Pegu.

In obedience to your Docket No. 249–6, General Department (Miscellaneous) of the 10th November last, I communicated with the Civil Surgeon, and his letter, on the subject of ganja and bhang producing insanity and other diseases, I herewith submit for your information.

In my Office or in that of the Police there are no returns or datum by which to compile a report on the subject, and I therefore can only state what I have myself noticed, and what I have learned from others, during my service in India and Burma since 1857.

While serving in a Native Infantry Corps, I observed that the men known to be addicted to the consumption of ganja or bhang were the most refractory, troublesome, and in many cases violent characters. During five years while I was Adjutant of my corps, I have known some smart and excellent sepoys go completely to the bad from the use of the drug and in more than one case become quite insane.

During the last four years, as Magistrate in Rangoon, many cases have been in my Court in which opium and ganja smokers and eaters have been concerned.

Having made no notes as to which drug the various criminals were addicted to, it is impossible to exhibit the cases in which ganja consumers figured in contradistinction to those affected by opium, but both, undoubtedly, exercise a strong influence in exciting to violent crime and in making criminals of men who without their use would, in all probability, not become so.

The moderate use of the drug, though not impairing the health or producing other bad effects at first, will soon, in my opinion, create lazy, idle habits and a

vitiated taste for larger quantities. The people in Rangoon town chiefly addicted to the use of ganja are the Hindus (Bengalees and Madrassees). I have ascertained from the farmer's books that about 20 per cent. Mahomedans and 60 per cent. Hindus indulge in ganja, whereas only 1 per cent. of Burmese do so.

I regret that, in consequence of pressure of judicial work, the submission of this report has been delayed.

No. 187–6, dated 12 December 1871.

From Captain *W. W. Pemberton*, Deputy Commissioner of Bassein, to the Commissioner of Pegu.

With reference to your General Department, Miscellaneous, No. 249–2, dated 10th ultimo, I have the honour to state that ganja is very little used by the Burmese, and no cases are known in this district in which the excitement to violent crime is supposed to have proceeded from the use of ganja or bhang.

Copy of the Civil Surgeon's report on the above subject is herewith enclosed.

No. 129, dated 11 December 1871.

From *A. Calloway Nisbet*, Esq., Civil Surgeon of Bassein, to the Deputy Commissioner of Bassein.

In reply to your Foreign Department, General, No. 183–4, I have the honour to report that I have had no opportunity of witnessing the effect of using ganja habitually, or occasionally even, except as a remedy in diseases.

I have long discontinued its use in consequence of its having produced in two cases in rapid succession symptoms of so decidedly maniacal a tendency as rendered its employment unjustifiable, in spite of its admitted styptic action in certain alimentary and uterine discharges. I have reason to think that my experience is by no means singular, and from what I have myself seen and ascertained from good medical authority, I believe that ganja does produce delusions in some minds tending either to excite to crime or groundless remorse for purely imaginary criminality. It is only right to add that my experience of the use of the drug is not great, as the cases above referred to occurred early in my Indian career; and in England, America, and in the Colonies I have visited, and they are many, I never saw it employed.

No. 100–4, dated 12 December 1871.

From Captain *W. C. Plant*, Deputy Commissioner of Myanoung, to the Commissioner of Pegu.

I have the honour, in reply to your Docket No. 249–3, Miscellaneous, requesting a report, after communication with the Medical Officer, in the use of ganja, &c., and, in accordance thereto, beg to submit a report which the Medical Officer has prepared on the subject.

2. Dr. Paul's report leaves me little to remark upon, because ganja is not in use with the natives of Burma, and the few Hindus and Mahomedans in the district are the only people who use the drug.

3. I don't know of an instance in which the abuse in use of ganja has been the cause of crime of a violent nature. I have heard of Mahomedan Malays running

running "amuck" when under the influence of ganja or bhang; but the use of ganja has often made a Hindustanee sentry negligent on his post and escape of prisoner has been the consequence, but nothing of a grave nature has come under my notice.

4. Burmese, Chinese, and other cognate races in Burma use opium in preference to ganja, which seems to be only raised for sale to some of the natives of India, for whom (ganja) farms have been permitted in the district. The local abkari rules prohibit holding a greater quantity than 5 tolahs of ganja (alike with opium) in the possession of a single person, and consequently the quantity grown is small and only raised in small patches.

No. 244, dated 12th December 1871.

From *P. G. Paul*, Esq., Civil Medical Officer, Henzada, to the Deputy Commissioner of Myanoung.

In obedience to instructions conveyed in your General No. 100—2, dated the 11th December 1871, in reference to Circular Letter, No. 345, General, dated Simla, the 10th October 1871, from A. O. Hume, Esq., C.B., Secretary to the Government of India, in the Department of Agriculture, Revenue, and Commerce, to the address of the Chief Commissioner of British Burma, requesting information as to whether the abuse of ganja produces insanity and other dangerous effects, &c., &c., I beg to offer the following observations, gained chiefly by personal experience, from among those who have sold and used the drug for a considerable time.

2. Often in my walks round the towns (both here and other places), I have gone into the ganja farms, conversed and watched the doings of the smokers of the drug, who had preferred the using of it at the place of the purchase.

3. The persons who frequented the farms were chiefly men of the Hindu and Mahomedan castes. Burmese and Chinese I have seldom met with.

The probable ages of the parties were 40, 45, and upward, and who were in the habit of using the drug daily, both by the chillum and by portion, and in strength of variable quantities, some of whom had commenced the use of the narcotic at a very early age, and have kept on to its use ever since; the expressions of whose feelings were, I considered, worth noting for information.

On asking one of them the effects produced by the drug, I was told unreservedly that a mixture of ganja and tobacco in equal proportions, smoked from a chillum, produced a pleasant species of intoxication and great mental cheerfulness (now raising him to the skies, and then lowering him to his original level), made him active and energetic, kept him in good spirits, and merry all the time the intoxication lasted, gave him very sharp appetite, he was able to eat largely, and that he usually enjoyed his food (of whatever kind placed before him) with relish.

The foregoing are the sensations caused by a full dose of ganja, worth three pies, or quarter of an anna in Burma, and one pie, or 1-12th part of an anna in India, on an inveterate smoker. The intoxication in such cases is said to last about 3½ to 4 hours (without affecting the intellectual powers), when the chillum is again replenished, as the effects are passing off, so that a confirmed ganja smoker is obliged to have recourse to his chillum five or six times in the 24 hours, to keep himself cheerful and merry, but beyond these he could not consume more.

The expenditure on the drug would cost a great smoker 1¼ or 1½ annas only per day. Labourers doing the most ordinary work, and receiving a due proportion of wages, have it in their means to supply themselves with the quantity of the drug for their daily consumption from their earnings, and for an ordinary smoker the outlay will be less, varying from 4 to 6 pies in Burma, and 1 or 2 pies, or 1-12th or 1-6th of an anna in India for his daily consumption.

The cost of bhang, which is chiefly used in portions, is cheaper, as it is procurable in large quantities at a less price, so that 3 pies worth in Burma and 1 pie worth in India would be amply sufficient for any drinker of the beverage in the 24 hours.

The mode of preparing the beverage is as follows :—

The large leaves and capsules of the *Cannabis Indica* without the stalks, are at first soaked in water, and after undergoing a thorough washing, are ground down to a very fine paste, which is then mixed with a sufficient quantity of milk ream and of sugar, and taken.

The drink, I believe, is used twice daily, and only by faquirs and those who are well-to-do, as its preparation involves a certain amount of outlay, and which cannot be afforded by those poorer in circumstances.

4. I beg further to observe that I have not in my experience seen bad effects arising solely from the daily use of ganja or bhang, such as confirmed cases of insanity or a propensity by them to commit violent crimes ; on the contrary, I learn that the ganja smokers and bhangees, as a rule, are very timid, retiring, and respectful, and that they do not like to be interfered with, nor do they like to interfere with others.

The daily outlay for procuring the drug also being so very small, and which could easily be met with from the daily earnings, there need be no incentive to commit theft or other misdemeanours, as those addicted to opium are compelled to do, so as to have sufficient means at their disposal to meet their increasing demands daily, to satisfy the inordinate cravings of the general system.

5. I beg, in conclusion, to observe that although ganja and bhang, like other narcotics, lose their bad effects when they have been taken daily for a considerable time ; but in the meantime I beg also to express my opinion that these drugs, or other excitants, would at the long run prove prejudicial to the health of the indulger.

No. 6—5, dated 10th January 1872.

From Captain *C. W. Street*, Deputy Commissioner of Prome, to the Commissioner of Pegu.

In reference to your General Department (Miscellaneous), No. 249—4, dated 10th November 1871, forwarding copy of circular No. 345, on the subject of the abuse of ganja and its effects, I have the honour to inform you that from the inquiry I have made there appears to be but very little ganja used in this district, and there are no cases known where the abuse of it has excited to violent crime or produced insanity.

The civil surgeon reports that he is not yet in a position to afford the information required.

No. 296 – 4, dated 3rd January 1872.

From Lieutenant Colonel *Horace Browne*, Deputy Commissioner of Thayet-myo, to the Commissioner of Pegu.

With reference to your General (Miscellaneous), No. 249—5, dated 10th November 1871, regarding the abuse of ganja, I have the honour herewith to forward a copy of the Thayet-myo Civil Surgeon's letter, No. 61, dated 22nd instant.

Ganja is rarely or ever abused or even used by the natives of this country. The consumption of it here is confined entirely to the natives of India, and is very small. With the exception of one instance (that of a servant of my own, who became perfectly idiotic by the excessive use of ganja) I have had no experience of its evil effects in this district. In the seaport towns of Burma I have seen many instances of insanity and violent crime attributable to ganja and bhang.

No. 61, dated 22nd December 1871.

From *W. Hanks*, Esq., Civil Surgeon of Thayet-myo, to the Deputy Commissioner of Thayet-myo.

With reference to your memorandum No. 296—2, dated 18th December 1871, forwarding circular No. 345 from the Secretary to the Government of India to the Chief Commissioner of British Burma, requesting information on the effects of the abuse of ganja and other preparations of hemp, I have the honour to inform you of my regret that, owing to my experience of such cases being so exceedingly small, I am consequently unable to supply particulars from which any reliable conclusion could be drawn.

No. 208, dated 12th March 1872.

From *W. P. Kelly*, Esq., Inspector General of Prisons, British Burma, to the Secretary to the Chief Commissioner of British Burma.

With reference to No. 345 from Secretary to Government of India, Department of Agriculture, &c., dated 10th October 1871, forwarded with your General Department, Miscellaneous, No. 500—269, dated 8th November, I have the honour to state that the medical officers and officers in charge of jails were asked, on the 23rd November last, to favour me with their opinions as to whether the use of ganja produced insanity, or was an inciting cause of violent crime; I have only just received replies from all.

2. I deduce from the opinions expressed in the above-mentioned replies, that the use of ganja in moderation produces as little ill effect as any other stimulant used sparingly; it is not necessary to enter into a description of the effects of its use in detail, the question being simply, does it produce insanity or lead to crime? That its abuse does induce, and directly produce, madness, there can, I think, be no doubt. I recollect many cases of it (although some medical officers and others say that it does not). I think there were six or seven insanes transferred to the lunatic asylum here last year from the jails of the province whose disease had originated from excessive use of ganja; they were all natives of India.

3. Officers in charge of jails as a rule know nothing of the previous history of prisoners, or of the circumstances connected with the crimes for which they are confined, and I cannot recollect any case in which crime was noted as being directly traced to the excitement caused by a large dose of ganja; but it appears to me that it must have the effect of sometimes causing strong mental disturbance and consequent violence of action in common with all other stimulants when taken to excess.

4. Ganja is almost exclusively consumed by natives of India. Burmans never were in the habit of using it (but I am sorry to hear that they are beginning to smoke it in places where they are much brought into contact with natives of India). There were 1,112 natives of India confined in the jails of the province last year, but I have not, as stated above, been informed in any case that the abuse of ganja was the inciting cause of crime amongst them.

5. The prolonged abuse of ganja enfeebles both mind and body, and deprives men of courage. Should a man in such a state deliberately want to commit a crime, an extra dose of his accustomed stimulant would be necessary to restore his nerve sufficiently to act, and in such a case the crime might erroneously be attributed to excitement caused by ganja.

6. Looked at from a jail officer's point of view, the use of ganja in moderation has one advantage over opium, that is, its cheapness. No consumer of it need steal to procure the means of purchasing it; whereas on the other hand one of the principal causes of petty thefts and crimes amongst Burmans

in Rangoon and other large towns where opium is largely used by them, is its expensiveness. An habitual opium-smoker is unfit for hard work, and is reduced to thieving to obtain money to purchase it.

7. Indian hemp is cultivated in small quantity by Shans and Karens in the north east of the province, and by Karens in the south.

Extract from the Excise Report for 1870–71.

GANJA.

Para. 13.—The total demand of revenue from the sale of this narcotic was Rs. 22,920; but from this sum must be deducted Rs. 1,586, refunded to the lessee of the farm at Akyab, being the amount of duty paid by him on the article purchased in Chittagong, and Rs. 685, the loss which resulted from a re-sale of the farm at Thayet-myo on the defalcation of the farmer at the commencement of the year. The net proceeds of the monopolies to the Government were therefore Rs. 20,649, whilst the realizations in 1869–70 were Rs. 21,980, a decrease of Rs. 1,331. A new farm was established in the Myanoung District on the 1st of April 1870, and was rented for the year for Rs. 200. The other farms remained as in the previous year, viz., one shop at each of the following places:—Akyab, Nâf, Rangoon, Bassein, Thayet-myo, Toungoo, Maulmain. The sale of this article is prohibited at Ramree, Sandoway, Tavoy and Mergui, and the Chief Commissioner considers that no further addition should be made to the number of places for the sale of this pernicious drug, which is smoked only by the natives of India. Indeed, he would be glad to have the opinion of the Commissioners as to the possibility of withdrawing all licenses for the sale of ganja throughout the province. Its use is at present happily little known to the people of the country; at the same time, however, there is every reason to fear that a taste for it may be spread among them by the people of India as in the case of opium. It certainly seems to the Chief Commissioner that it is very desirable to at once sacrifice the small revenue derived from this source and stop the consumption absolutely before the evil comes upon the country. The only sufferers from the cessation of the supply will be a few of the Indian labourers who come to work here during the rice season.

Revenue from this drug.

Chief Commissioner considers that the sale of ganja should be limited if not altogether abolished.

They must learn to take the want of ganja as one of the discomforts of a sojourn in a foreign land, for which they are amply compensated by the large earnings they obtain. The Chief Commissioner observes that the percentage of persons admitted to the Dacca Lunatic Asylum in Bengal who had lost their intellect from the effects of ganja, was from—

1860 to 1867	-	-	-	-	45·4 per cent.
1868 to 1870	-	-	-	-	34·7 „

It has been said that some ganja has been grown lately in this province. The cultivation should be at once checked.

No. 3073, dated 8th July 1872.

From *H. B. Harington*, Esq., M.A., Officiating Secretary to Chief Commissioner, Oudh, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I AM directed to acknowledge the receipt of your letter No. 343, dated 10th October last, directing an inquiry in regard to the effects of the use or abuse of the several preparations of hemp, and the alleged influence of ganja and bhang in exciting to violent crime, with the view, if necessary, of imposing restrictions on their use.

2. In

2. In reply, I am directed to state that the Magistrates, the Police and Sanitary Departments have been consulted, and special endeavours made to trace the history of certain inmates of the Lucknow Lunatic Asylum, whose condition was supposed to be connected with the immoderate use of preparations from hemp.

3. An abstract of the different replies is annexed; and although there is much variety of opinion, the conclusion warranted by this inquiry seems to be that the ill effects of the use of hemp have been exaggerated. There seems nothing to show that bhang, if used at all, *must* be used immoderately, or that, if used immoderately, it has mischievous consequences. Ganja, it is said, has, when used immoderately, a tendency to produce asthma.

4. That criminal classes use the drugs immoderately is beyond doubt, but it does not seem that the consumption of these preparations acts as a direct incentive to violent crime; although persons bent on committing such crimes do doubtless have recourse to such stimulants to bring them up to the mark, much in the same manner as an Englishman similarly situated has resort to "Dutch courage."

5. Gathering, then, from the general expressions of opinion on the subject that the use of these drugs in moderation is perhaps not hurtful, and that their use in immoderation is not more prejudicial than an immoderate imbibition of alcohol in England, the Officiating Chief Commissioner believes that any interference, on *moral* grounds, with the cultivation and use of hemp and its preparations is uncalled for; and if we attempt to stop their use by a prohibitory duty, we shall only drive the people to the use of a still more deleterious plant, such as the dhatura; for it may safely be assumed that in all countries men will have resort to stimulants of some kind.

Abstract of Replies regarding abuse of Ganja and Bhang.

No. 179, dated 11th January 1872. Mr. Carnegy submits the opinions of his district officers.

Rai Bareli. Colonel Steel states that from inquiries he has made and information he has received from the medical officer, he is of opinion that there cannot be the least doubt of the deplorable results of indulging in ganja and charas, but the hemp plant, bhang, is not injurious in its effects unless taken in excess, and it is used by Hindus generally mixed with water as sherbet. There is also a concoction of bhang and sweetmeats called majum, which is an accompaniment at festivals and other great gatherings of the brethren, besides many other modes of consumption.

It is true that all have an exhilarating or intoxicating effect according to the amount used, but ganja and charas are the worst, creating in those who indulge habitually weakness, disinclination to take nourishing food, and sometimes insanity.

There can be no doubt that anything which has such a dire and enervating effect must tend to demoralise those who indulge in it, and thus indirectly lead to crime; but he doubts if the abuse of either ganja or bhang is more likely to lead to violent action so much as the abuse of alcohol.

Sultanpur. Mr. Kavanagh states that the District Superintendent, Major Sharpe, considers that their effects are as bad, if not worse, than those caused by opium, and that any restriction on the sale of ganja would be very beneficial. He cannot say whether criminals apprehended for theft, &c., are generally bhang-takers or not; but all his inspectors and police officers are unanimous in opinion that the prevalence of the disease "dumma" or asthma is due to bhang, and he believes it is one of the most deleterious drugs that can be taken.

Mr. Kavanagh says that he has never had a criminal trial in which the use of ganja or bhang had anything to do in inducing the crime. The lower classes of religious devotees often use it to produce insensibility and forgetfulness, and the lower castes consume them because they are cheaper than spirits.

These drugs do not stimulate to crime, and he is of opinion that the only objection to the use of them is their being more injurious to the constitution than other expensive drugs.

In the Gonda, Baraich and Kheri districts, the poor consume a good deal of ganja, and Mr. Kavanagh did not notice in them that this circumstance had any remarkable effect on crime. It is not unlikely that there are certain fanatical sects in the Punjab who use ganja and bhang to produce excitement to support them in perpetrating an offence.

Pratabgarh.

Captain Hewett has often heard it alleged that the abuse of ganja produces insanity; but whether it really does so or not he has not been able to ascertain with any degree of certainty. He adds that the use of ganja excites to violent crime; for instances have come before him, whilst investigating cases of robbery or dacoity, in which it has transpired that the defendants, previous to making their attack, had met at a rendezvous, where they had all partaken of bhang, or some other intoxicating and exciting preparation of the hemp plant.

Natives, he knows, generally believe that the use of these preparations imparts bravery, and incites to deeds of personal valour. Sepoys in our native regiments, before the Mutiny, were in the habit of using it a good deal; and while on active service before Delhi he knows it for a fact that many of the foremost men and officers of the enemy had partaken largely of this dru before coming into action, for whenever they got to close quarters his "Seikhs" invariably called his attention to the excited and intoxicated appearance of the rebel leaders.

In Captain Hewett's opinion, it would be advantageous to restrict the use of ganja and other preparations of hemp by enhancement of the duty on its consumption. He is afraid that enhancing the duty on native liquor has already caused many of the poorer classes, especially byragees and faquirs, to resort to ganja (the use of which, he is convinced, is very prejudicial to a man's general health) as a cheaper stimulant.

Commissioner's opinion.

Mr. Carnegy has no means of judging whether the consumption of these drugs promotes insanity or not; but he thinks that, as in the case of spirits, bad effects only follow the abuse, and not the use in moderation, of these articles, and it is certain that there are many cases in which their administration is actually beneficial.

It must be borne in mind that in Oudh the consumption of these drugs is nothing to what it used to be under native rule, when their cultivation and preparation were, it may be said, unrestricted.

The prices now demanded under the excise system have turned what was formerly almost valueless into a luxury.

It does not appear to Commissioner that further restrictive action on the part of Government is at present called for. In his view all that is required is so to regulate the duty on these articles, with reference to the price of spirits, that the poorer classes shall not be compelled to give up the latter stimulant for the former, since there can, he presumes, be no question that the use or the abuse of liquor is less dangerous than the use or abuse of drugs.

Sitapur, No. 293, dated 26th January 1872.

Officiating Commissioner submits extracts from the reports of Deputy Commissioners, District Superintendents, and Civil Surgeons on the subject.

Deputy Commissioner states that:—

Sitapur Deputy Commissioner's opinion.

"many people believe that intoxication caused by preparations of the Indian hemp plant leads to the commission of violent crimes, and that a long-continued abuse of it has a tendency to produce insanity. I do not believe that the abuse of these drugs is a bit worse than the abuse of spirituous liquors. But at present very little appears to be known about the effects of the use of these drugs. Managers of lunatic asylums have the best opportunities of inquiring on the subject. Until more information is obtained on the subject, I do not think any steps should be taken to limit or prohibit the cultivation of the hemp plant, unless at the same time the manufacture of spirituous liquor is also prohibited."

The District Superintendent of Police (Mr. Prince) states that:—

District Superintendent's opinion.

"as far as my experience as a police officer goes, I have always found that the abuse of the above-mentioned drugs has a most deleterious effect on the nerves and brains of the person subject to its *habitual use*. That the abuse of ganja produces temporary insanity no one will doubt who notices the insane

in sane appearance of the person under its influence and watches his insane actions, the latter unlike the effects of opium always taking the violent maniac type, and that the *continued* and *habitual* abuse of this destructive drug must in longer or shorter time produce confirmed and chronic insanity, is reasonable to suppose, but experience also teaches that such is the case. The sad cases you meet among the Hindu caste of byragees are all the effects of excess in smoking of ganja, charas and drinking of bhang."

The Civil Surgeon states that :—

Civil Surgeon's opinion.

"my experience in the observation and treatment of the effects produced by preparation of Indian hemp has been so limited that any remarks of mine can be of but small value. I have not had in a period of five years over a dozen cases under treatment. In all, with one exception, recovery from derangement produced by the drug took place from three to eight days, and so far as I could ascertain, it appeared to have been permanent. The exception was in the case of a man aged about 22 years. He suffered, within a space of two years, on four different occasions, after a debauch from violent delirium, hallucinations of the senses and homicidal tendencies. On the last occasion recovery took place partially, and for a short period the affection ultimately merged into a form of homicidal mania. In this man's family there was no hereditary taint of insanity, and it did not appear that he indulged in any other form of intemperance."

"I am aware a belief exists with many natives to the effect that long-continued and excessive use of the drug has a tendency to produce insanity ; but then I have never found that they attributed to other forms of intemperance any influence in the production of the insanity, and it appears to be the case that the majority of those who use the drug are also addicted to other forms of intemperance. In three epileptics I observed abstention from the drug was followed by improvement, its use caused a more frequent recurrence of seizures, and they lasted longer."

The Deputy Commissioner of Hardui says :

Hardui Deputy Commissioner's report.

"I have failed to elicit any reliable information from the magistrates in this district on the subject of the effects produced by the abuse of ganja, and I have little or no personal knowledge of the matter.

"A few months ago a man was brought in by the police as insane and was so treated for three or four days when he recovered, and it was ascertained that his temporary loss of reason was caused by, I suppose, an immoderate consumption of bhang.

"The Civil Surgeon, in a letter to the Sanitary Commissioner, No. 249, dated 14th November 1871, reported that ganja, bhang and charas were extensively used by the people of this district.

"The Thakoors used the drug in moderation and the Mahomedans in excess. If the habit of smoking ganja is contracted early in life, the sudden withdrawal of the drug induced, the civil surgeon observed, symptoms of incipient insanity, and he expressed a belief that the majority of the cases of insanity which came under observation are due to the abuse of Indian hemp.

"This officer has been in this district some years. The subject is especially within his province.

"The stray cases that may fall under a magistrate's observation cannot, for want of scientific investigation, afford very valuable material for a confident opinion.

"Natives generally seem not to have noticed any evil permanent effect from the abuse of these drugs.

"If I can venture to give an opinion, I should say that the habitual use of any drug of so dangerous a character that, if used immoderately, it produces temporary insanity, must have a deleterious influence on the brain, ending with permanent loss of reason.

"I do not think that the use or abuse of ganja or bhang has any perceptible influence in exciting to violent crimes. The causes of violent crimes are ascertainable, and among them, except perhaps in extremely rare and exceptionable instances, the influence of these drugs cannot be discovered.

"The criminal classes, simply because they belong to an evil, unlawful, and degraded class of society, indulge the most in these as well as in other noxious practices.

"Restricting the use, then, of ganja and the other preparations of hemp would, I believe, have no perceptible effect in diminishing crime otherwise than by improving the moral disposition of the portion of the criminal classes that indulge in their use. Indirect and little as such an effect may be, its importance should not be underrated.

"If practicable, I think it would be better to prohibit the cultivation of the plant than to enhance the duty upon consumption. Under both methods there would be the same effort to cultivate illicitly ; and as there seems to be no beneficial uses for this plant and its preparations, there can be no good grounds for allowing it to be cultivated at all.

Kheri Deputy Commissioner's report.

"I have consulted the officers indicated in your docket relative to the effect of the habitual use or abuse of ganja, and their opinions are briefly as follows :—

Civil Surgeon's statement.

"The Civil Surgeon says he has seen two or three cases of temporary insanity, believed by himself to have been caused by the abuse of bhang or ganja, though in each case the fact was denied by the patient, who in every instance got better in a few days.

"The District Superintendent of Police offers his opinion that the use or abuse of ganja does not produce insanity or other dangerous effects, such as the committal of serious criminal offences, grounded on the result of his inquiry that none of the persons who have been sent up during the past year as insane used ganja at all, and only a very small minority of the offenders in serious criminal cases were reported to have been accustomed to use ganja occasionally. All thanadars and inspectors in the district are unanimous in their reports on the subject.

District Superintendent's opinion.

"The Extra Assistant Commissioner would advocate the reduction rather than the enhancement of the duty on these substances, as the latter would have the effect of increasing the offences of smuggling the product of the wild plant, or drive consuuers to resort to the use of dhatura seed, which is worse in its effects than ganja.

Depnty Commissioner. "I have nothing to add of my own experience."

Commissioner's opinion.

In his own Court Commissioner has seen more than one instance in which the criminal pleaded, in excuse or explanation of violence or murder, that the crime was committed when under the influence of bhang; and there is in his mind no doubt that the use of the drug operates much as intoxicating liquors do in England, by stimulating the passions and weakening the power of self-control.

In this way a crime is often committed under the influence of bhang which, without it would not be committed at all; because when the reason is disordered by the drug, the temptation to the crime becomes stronger, the failing courage receives an artificial support, the prospect of punishment becomes dim or fades out of sight altogether, and the moral powers of resistance and self-control are enfeebled or lost. But further than this, so far as Commissioner's experience goes, the use of intoxicating drugs does not create insanity, temporary or permanent.

He would not advocate an increased duty upon the drugs now in use because the consumers will certainly be driven by the scarcity to use as substitutes drugs of, if possible, still more poisonous properties.

Already the high duty has induced the people in some instances to use the dhatura in place of bhang, and bad as the latter is, the substitute is infinitely worse.

No. 351, dated 15th February 1872.

Sanitary Commissioner states that he has asked for the opinions of all the health officers of the province on the subject. Many of them simply state that no cases of insanity produced by the preparations of Indian hemp have been observed by them.

Dr. Bonavia says that he has ascertained that a very large proportion of the people of Lucknow drink bhang at least once a day, more especially in the winter, but he has not been able to trace any case of insanity to the abuse of bhang, ganja or charas.

Gonda.

The Health Officer of Gonda states that the inhabitants of the northern parts of the district indulge much in the use of ganja and bhang, but he has not been able to find that the abuse of the preparations of Indian hemp causes insanity. An employé of the Bulrampore Maharaja said that he did not know of any instances in which such a result followed.

Faizbad.

Dr. A. Cameron, health officer, has had insane persons under his care who who were addicted to excessive ganja-smoking, and he finds mention several times in records of lunatic cases kept by his predecessors of the patients having been ganja-smokers. He adds—

"I am not aware that the connexion has ever been thoroughly and satisfactorily established in any of these cases, but I have more than once discharged such cases cured after only a short detention during which they were deprived of the drug."

Sanitary Commissioner.

In the Lucknow Lunatic Asylum persons said to be addicted to the abuse of the preparations of Indian hemp are often admitted, and cases similar to those referred to by Dr. A. Cameron are not uncommon there.

Indian hemp produces a peculiarly exhilarating form of intoxication, which often induces people while under the influence of it, especially beginners, to behave in the most extravagant manner.

It is probable that persons whose minds are unsound already may occasionally, after indulging in ganja or bhang to excess, manifest symptoms of insanity which

which make it necessary to put them under restraint till the effects have gone off.

In Sanitary Commissioner's opinion, ganja, bhang, and charas no more produce insanity than alcohol does, and as an intoxicating drug Indian hemp would appear to do less harm to the constitution.

Dr. Chevers, in his "Medical Jurisprudence," mentions that he has never been able to perceive any ill effect from sudden discontinuance of the habit of ganja-smoking, such as the delirium tremens which is liable to attack an habitual drunkard deprived of his alcohol, and this observation is confirmed by the experience of others.

No. 681, dated 20th February. Commissioner, Faizabad, submits abstract of reports from Deputy Commissioners.

Faizabad. Deputy Commissioner, Faizabad, merely forwards copies of Civil Surgeon's and District Superintendent's replies, and states that he has no personal knowledge of the effects of the use or abuse of ganja.

Deputy Commissioner, Baraich, states that from inquiries he has made, and from a report from the District Superintendent, it is evident that abuse of ganja does not produce insanity; and quotes from Mr. Smith's report as follows:—

"Considering the large number of persons there are who smoke ganja, the doing so has not had a bad effect upon them as any other drug. I have not discovered one instance of madness brought on by smoking ganja; not a single person who is now insane in this district, and about whom inquiries have been made, appears to have become insane from smoking ganja; nor can I discover that of the insane persons there are any whose fathers were great ganja-smokers. The opinion of all natives is that ganja alone does not bring on insanity."

Gonda. The Officiating Deputy Commissioner states that the replies by natives to questions asked them on the subject of the supposed pernicious effect of ganja and bhang are exceedingly vague and contradictory.

The whole question appears to be one of degree. Ganja smoked immoderately is admittedly bad; smoked in moderation it has no evil effect. It is alleged by some persons that abuse of these drugs tends to destroy virility. But no evidence or instance has ever been adduced by those who have been questioned in support of their vague assertions. Bhang, in the green state, is undoubtedly useful for cattle on account of its stimulating and nerving qualities.

Commissioner promises further information.

No. 13-778, dated 26th February 1872. Officiating Inspector General of Police forwards copies of replies from Major Sharpe, Mr. Garstin, Inspector Ram Narain, and Mr. Hannah. He is himself of opinion that the constant and excessive use of ganja would produce insanity in the same way that the constant and excessive use of ardent spirits produces delirium tremens, and eventually madness.

Colonel Barrow believes that a man under the influence of bhang would be more likely to commit a violent crime than one not so influenced; but in the course of his experience as a police officer he can recall but very few cases of violent crime which have been committed under its influence; and his own observation does not lead him to think that the interference of Government is necessary to restrict the consumption of ganja, and the plant is so indigenous that he doubts if any restriction to its cultivation would be of much avail.

Major Sharpe submits the following extract from Deputy Commissioner's report on the same subject, which, he says, will give the substance of what he "must have written":—

"The District Superintendent of Police, Major Sharpe, considers that their effects are as bad, if not worse than those caused by opium, and that any restriction on the sale of ganja would be very beneficial; he cannot say whether criminals apprehended for theft, &c., are generally bhang-takers or not; but all his inspectors and police officers are unanimous in opinion that the prevalence of the disease of 'dumma' or asthma is due to bhang, and he believes it is one of the most deleterious drugs that can be taken."

Mr. Garstin.

Reports that during his tour he made careful enquiries as to the alleged influence of ganja and bhang in exciting to violent crime.

The general opinion appears to be that the intoxicating preparations of hemp rather deaden than excite the senses, though he is of opinion that the effects vary according to different constitutions; for it is well known sometimes to produce a frenzy and violent passion which, however, only lasts for a short time, leaving those who swallow the poisonous drug in a state of languor and imbecility, until a renewal of the dose revives the spirits.

The frequent use of the drug shortens the lives and enfeebles the constitutions of its victims; it apparently serves no good use, and is not, like opium, valuable for medicinal purposes.

He has spoken to and seen a great number of ganja-smokers, who appear alike shattered in mind and body.

Almost all admit that the practice is as useless as it is vicious, some of the poorer classes alleging that it is a preventive to rheumatism and the like, the fact probably being that it deadens the senses to cold or fatigue.

A law absolutely prohibiting the cultivation of the plant would hardly be expedient, though a considerable enhancement of the duty on such preparations as ganja and bhang would result in no inconvenience to anyone and be of great public benefit.

Inspector Ram Narain, Officiating District Superintendent of Pratabgarh.

States that in his opinion the offensive smell from smoking ganja and bhang does not produce insanity, for the intoxication caused by them does not last longer than two hours.

By the word insanity he understands that a person is mad for life or for some years; this, however, bhang and ganja does not produce, and he has not yet heard of such an instance.

Mr. Hannah, Superintendent Inspector General's Office.

States that the constant use of bhang does not seem to leave any very evident marks on the individual constitution, and, judging from the personal appearance of those who use it, does not seem to impair mental or physical development, rather it seems to foster the growth of the body, though this may be dependent largely on the circumstance that those who use it are well-to-do, never suffering from any privation in the matter of food, &c.; they are not exposed to the inroads that the constant use of stimulants makes on both mind and body. In comparison with opium and ardent spirits bhang is innocuous, and its effects are apparently only temporary. In its immediate effects bhang is strongly stimulant, exciting the imagination without influencing the grosser passions, soothing the care-worn and depressed, and enabling individuals to look with complacency upon those circumstances of life which filled their minds with grief and care in their sober moments.

With an ardent, excitable temperament, no doubt the use of bhang would lead to the commission of crime under its excitement; but as a rule the classes who use this drug are not those so endowed by nature, except the Chatris and Thakoors.

The effects of ganja are more destructive even than those of opium and spirits, perhaps partly because the classes who use it are just those who suffer most from the vicissitudes of the weather, the exposure and privations inseparable from their particular callings. The drug is smoked, and its constant use is soon apparent on the body,—the limbs become attenuated, the shoulders and chest drawn forward and inward, and very soon disease of the respiratory organs sets in in some form or other. Chronic asthma being one of these, the mental faculties do not long escape the poison taken directly into the blood through the lungs; the appearance becomes stupid and dogged, the eyes are bloodshot, and the continued use of the drug brings on permanent imbecility, its early use being characterised by stolidity and then going on to an utter inability to comprehend the most simple ideas, the mind being gradually but hopelessly and permanently impaired. Where the drug has been excessively used, instead of moderately and habitually, the body has not had time to receive injury; but the brain and mental powers have been directly

directly and violently disturbed and more or less permanently injured, the effects being either temporary or incurable lunacy. Many of the male occupants of the lunatic asylums are the unfortunate victims of this drug. It is also alleged that the effects of the drug when used immoderately, do not confine themselves to the individual alone, but are also hereditary, exhibiting their presence in idiocy and lunacy.

The use of ganja is immediately to fire the animal passions, and it is therefore no doubt an incentive to violent crime; this, however, must depend largely on the idiosyncracies of the individual and the inducement to such from his condition of life or his particular calling.

Charas, ganja, and bhang are the extract, dried flowers and dried leaves of one and the same plant; the first is expensive, and thus its use is under some restraint; the use of the others is almost uncontrolled, and will be always so on account of the facility of its cultivation, or rather from the plant requiring no cultivation at all. It will grow in any nook or corner out of the reach of observation, and a single plant would supply the wants of a large number of persons. This being the case, no excise law that could practically be worked out would reach or restrain its cultivation short of the entire prohibition of its cultivation (under heavy penalties) by private individuals, and even then there can be no doubt but that it would be still cultivated clandestinely in the many thousand villages of the province.

No. 1028, dated 15th March, 1872.

Officiating Commissioner, Sitapur, sends copies of reports from the district superintendents of Kheri and Sitapur, regarding the criminal lunatics Cheda, Gunga, and Doond, who, these officers state, committed the offences with which they were charged while in an unsound state of mind, that the cause of insanity cannot be ascertained, but that they were not in the habit of taking intoxicating drugs, and that their blood relations do not appear to have ever been afflicted with madness.

Mr. Ousley forwards reports from the Deputy Commissioners of his division.

The Deputy Commissioner, Unao, believes that there are no sufficient reasons for supposing that the abuse of ganja *per se* produces insanity.

Mahomed Buksh, a native doctor in the Unao district, states that, during his thirty years' experience, he has never found any person go mad from the mere use of ganja or bhang. Excess of bhang produces a torpid state of the mental powers, and excess of ganja leads to corruption of the blood, irritability of temper, and a peculiar wildness of thought; madness results only when there is a predisposition to it.

The Deputy Commissioner of Barabankee says that he cannot speak from personal knowledge of the effects of ganja on the system, but he believes that the use of ganja and other preparations of the *Cannabis Indica* or *Cannabis Sativa* affects the brain, and keeps a person in a state of unhealthy mental excitement. The native gentlemen consulted by the Deputy Commissioner told him that ganja taken in excess produced insanity.

Dr. Kidd, at Barabankee, believes that the abuse of ganja invariably ends in mania.

The Deputy Commissioner, Lucknow, says that two out of the three criminal lunatics belonging to his district in the lunatic asylum were smokers of ganja.

Commissioner is unable to say from personal observation what the effect of the use of ganja on the system may be, its immoderate use like the use of all stimulants is doubtless excessively hurtful to the mind and the nerves; but he believes that there is much weight in a paragraph of Dr. Cannon's report for last year on the Lucknow Lunatic Asylum. He writes:—

"I beg to state I am entirely of Dr. Payne's opinion, that the excessive use and abuse of narcotics and stimulants amongst the insane quite as often (and much more frequently) follows some aberration of the mind or depressed state of the nervous system, as that these excesses are the origin of insanity."

No. 1359, dated 3rd May 1872.

Commissioner, Lucknow, states that of the seven lunatics in the statement which accompanied this office No. 5677, dated 20th December, three belonged to the Lucknow district, viz., Nos. 242, 178 and 236, regarding whom the Deputy Commissioner reports

that Ramdar Khan (242) is a violent lunatic, was a vagrant beggar, that he was in the habit of drinking country liquor, and was a smoker of ganja and eater of bhang. He ate little food, only as much as he could get by begging, but drank, smoked and ate bhang to excess.

Thanna (178) described as idiotic from excessive use of spirits. He did not eat opium but drank country liquor and tari (palm juice) and smoked ganja to excess. He ate little, and was habitually intoxicated. In the cold season he became crazy for two-and-a-half months at a time.

Ram Sewuk (236) is reported by the police officer to have been a mad devotee, whose madness was caused by religious excitement, and not by the use of intoxicating drugs.

Chedi, No. 55, was from Pratabgarh, and died on 18th December 1871, and Buldeo, No. 243, came from Hardui.

As regards Heeralal, No. 42, the Deputy Commissioner, Barabankee, states that there was nothing in the proceedings to show that the man had lost his mind from the use of intoxicating drugs.

Commissioner can give no further information than that contained in his No. 950, dated 22nd ultimo, on the subject of the effects resulting from the use of ganja.

In continuation, Commissioner, Lucknow, forwards a report from Kalb Ali Khan, Extra Assistant Commissioner, Unao, stating that Bhowani (No. 1, and last but one on the list) was in the habit of using ganja, bhang and liquor to excess, that he consequently became insane some time ago, and that four days prior to the murder which he committed he indulged in an unusual quantity of ganja, and having lost his senses bit his wife's nose.

No. 1386, dated 7th May 1872.

The people of his village are of opinion that excessive use of the drug was the cause of Bhowani's insanity.

Commissioner, Faizabad, embodies the replies of Deputy Commissioners, Gonda and Baraich.

No. 2081, dated 31st May 1872.

Gonda. Deputy Commissioner submits copy of report from Civil Surgeon, stating that—

"I have made inquiries into the antecedents of the lunatics at present in the Gonda jail.

"The mother and cousin of Sukti Brahman state that he first showed signs of insanity about three months ago, that they found themselves quite unable to control him. On one occasion he set fire to his house; that he had never made use of ganja or bhang, but that he occasionally indulged in tobacco in the form of snuff. The lunatic gives the same account of himself.

"The brother of Jhagrabari states that Jhagra first showed signs of insanity about four months ago, that he never indulged in ganja or bhang, but that he was in the habit of smoking tobacco. The lunatic says that he was in the habit of smoking ganja, and that smoking was his life. The brother is very positive in his statement that Jaghra never did smoke ganja.

"The lunatics have been medically treated to a certain extent, but moral treatment is impossible except in a proper asylum, where it is hoped these men will soon be removed."

Baraich. The Officiating Deputy Commissioner states that, as the criminal lunatics referred to did not belong to his district, no action was taken, and the papers were consigned to the records. The civil surgeon of Baraich reported that he was not prepared to give an opinion on the subject. The Deputy Commissioner refers to his original report which has already been embodied in Commissioner's No. 681, dated 20th February last.

The Deputy Commissioner, Faizabad, has been urgently takeeded.

Commissioner, in reply to reminder, sends copy of docket from Deputy Commissioner, Faizabad, who states that nothing can be ascertained of the antecedents of Rampershad, who was a vagrant. That Kareemun Shah, although admitted into the asylum in 1867, was not, it is believed, sent from Faizabad as lunatic, for he was sentenced in July 1865, under Section 391, and transferred to the Lucknow jail, where he became insane.

No. 2440, dated 25th June 1872.

Further report promised. Enquires if further particulars about Runsoor can be given, and states that his residence ascertained, inquiry would be facilitated.

Commissioner,

No. 2571, dated 1st July 1872.

Commissioner, Faizabad, forwards copy of docket from Deputy Commissioner, Faizabad, who reports that from inquiries made in Kareemun's village, he does not appear to have been addicted to the use of either ganja or bhang, that the only intoxicating substance he was known to be partial to was tari at its proper season, and that the man never displayed any symptom of insanity before his apprehension.

No. 3069, 53 G., dated 3rd August 1872.

From the Honourable *E. W. Ravenscroft*, Acting Chief Secretary to the Government of Bombay, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I am directed by the Honourable the Governor in Council to acknowledge the receipt of your letter No. 339, dated 10th October last, relative to the effects of the use and abuse of the several preparations of hemp and the alleged influence of bhang and ganja in inciting to violent crime and insanity. In reply, I am directed to forward to you the papers noted in the margin, containing the opinions of the several officers who have been consulted on the subject, and to state that, in the opinion of this Government, the restrictions which at present exist upon the sale of bhang and ganja should be preserved, and that they should be treated as other intoxicating drugs or spirits, and be made subject to a duty, but there appears no occasion, so far as this Presidency is concerned, to take measures for the limitation or prohibition of the cultivation of the hemp plant.

Letter from the Health Officer for the city of Bombay, in charge of the office of Municipal Commissioner, No. 5595, dated the 28th November 1871.

Letter from the Commissioner in Sind, No. 1941, dated the 28th December 1871, with enclosure.

Letter from the Commissioner of Customs, No. 108, dated the 11th January 1872.

Letter from the Police Commissioner, S.D., No. 718, dated the 10th February 1872, with enclosures.

Letter from the Inspector General, Indian Medical Department, No. 527, dated the 12th February 1872.

Letter from the Police Commissioner, N.D., No. 959, dated the 19th February 1872.

Memorandum from the Commissioner in Sind, No. 207, dated the 17th February 1872, with enclosures.

Summary of replies of judicial and police officers.

No. 5595, dated 28th November 1871.

From *T. G. Hewlett*, Esq., Health Officer, in charge of Office of Municipal Commissioner, Bombay, to the Chief Secretary to the Government of Bombay.

I had the honour to receive Government Resolution No. 3118 of 1871 (General Department), and in accordance with the terms thereof, beg to state that I have examined the mortuary tables for the last 10 years and do not find any death within that period ascribed to the use of ganja or bhang. This result is further confirmed by searching the records in the coroner's office, as no inquest has been held in that time, or any person alleged to have been poisoned by either one or the other preparation.

No. 1941, dated 28th December 1871.

From Colonel Sir *W. L. Mereweather*, K.C.S.I., C.B., Commissioner in Sind, to His Excellency the Governor and President in Council, Bombay.

With reference to Government Resolutions Nos. 3118, dated the 27th October 1871, in the General Department, and 4464 of 11th November 1871, and to the Memorandum No. 5020 of the 14th instant, Judicial Department, calling for an early reply to the same, I have the honour to state that I have not yet received answers from all the officers whom I thought it desirable to consult, but I append a précis of those replies which have been received, from which it will be seen that excepting Dr. McRury, who has been in Sind but a short time, there is a general unanimity of opinion that the use of bhang, ganja, or opium in this province

is not productive of violent crime or of insanity. I entertain the same opinion, and do not consider that there is any sufficient ground for restricting the use of the hemp plant, or of limiting its cultivation.

2. A précis of further replies which may be received by me on this subject will be submitted to Government.

Précis.

Political Superintendent, Thur and Parkur, dated 9th November 1871—Major Tyrwhitt.

Reports that ganja and bhang are not much used in his district, and indulgence in them has never produced any dangerous effects so far as he has noticed.

District Superintendent of Police, Kurrachee, dated 13th November 1871—Colonel Marston.

States that bhang is most extensively used by the people of Sind; but the decoction which is drunk is not much more hurtful than beer. That ganja is smoked in a hookah, but the use of it is not general. Does not consider that the use of the preparations of hemp tends to insanity or the commission of violent crime, although a man bent on the commission of a violent crime may occasionally stimulate his courage by an overdose of bhang.

Superintendent of Jail, Hyderabad, dated 23rd November 1871—Dr. Holmested.

States that in and about Hyderabad ganja is but little used, but bhang and charas are largely consumed both by Mussulmans and Hindus, but more so by the former, and that many women resort to bhang, especially prostitutes. From inquiries made by him, it appears that these drugs alone rarely incite to crime or cause insanity. They rather cause powerlessness and cowardice. Hard drinkers of bhang, however, add to the beverage dhatura, and then imbecility will in course of time occur. Is against any increase of duty or prohibition to cultivate the drugs, the population being so poor and steeped in hunger and nakedness that the drugs are almost a necessity of life.

Superintendent of Jail, Kurrachee, Dr. Hopkins, 30th November 1871.

Is of opinion that violent crimes in Sind are most frequently the result of jealousy and cannot be attributed to the use of stupefying drugs.

District Superintendent of Police, Hyderabad, 1st October 1871—Captain Crawford.

Reports that he has never found by experience that in Sind the abuse of ganja or bhang has had any influence in exciting persons to the commission of violent crime, and that in his opinion a moderate use of the drugs is the reverse of hurtful to the poorer classes, who are often indifferently fed and clothed.

Superintendent of Jail, Shikarpur, 9th December 1871—Doctor McRury.

States that the inhabitants of Upper Sind are addicted to the abuse of the several preparations of Indian hemp, and that in his opinion prohibitory measures should be adopted. Considers the abuse of bhang and ganja injurious to the body and has a tendency to induce mental unsoundness or excite to violent crime.

No. 108, dated 11th January 1872.

From *L. Reid*, Esq., Commissioner of Customs, Bombay, to the Chief Secretary to the Government of Bombay.

I HAVE the honor to acknowledge the receipt of Government Resolution No. 3118 of the 27th October last, forwarding copy of Government of India's letter No. 339 of the 10th idem for consideration and report in regard to the effects of the use or abuse of the several preparations of hemp.

2. In reply, I have to state, for the information of Government, that the manufacture and retail sale of ganja is regulated under a license system, which in the mofussil is administered by the District Revenue Officers under Section 10 of Act III. of 1852, and in the town of Bombay itself by this Department under Act XXXIV. of 1857.

3. In this Presidency ganja, otherwise called bhang, is used as a drug in smoking mixed with tobacco. There are other preparations made of this drug called "majum" and "subjee." The former is made in cakes by mixing various kinds of spices therewith, and is used as intoxicating confectionery, while the latter is a liquid preparation, supposed to have cooling effects and used as an agreeable beverage.

4. This

4. This drug, when smoked, or its preparations eaten or drunk in excess, has an intoxicating effect, and its influence no doubt is capable of exciting to violent crimes like other intoxicating preparations taken in excess; but in my personal experience, cases are very rare in which the abuse of the drug has tended to serious results.

5. In this Presidency the ganja appears to be chiefly used by "gossavees," "faquirs" and other mendicants, generally of a low class.

6. In my opinion, there seems no necessity for having further restrictions imposed on the use of ganja than those which now exist.

No. 718, dated 10th February 1872.

From *W. H. Havelock*, Esq., Police Commissioner, Southern Division, Bombay, to the Chief Secretary to the Government of Bombay, General Department.

With reference to the Government Resolution, No. 3118, dated 27th October 1871, I have the honour to state that, having received a similar call for a report from the Secretary to Government in the Judicial Department, I submitted, after consulting the District Superintendents of Police in the Southern Division, the result of my inquiries as to the use and abuse of the several preparations of hemp in a letter to Government in that Department, No. 171, dated 27th January 1872, copy of which and of its enclosure I beg to append to this letter.

2. The reports of the Collectors, Southern Division, to whom also a reference was made on the subject consequent on receipt of the Government Resolutions cited at the beginning of paragraph 1 above, do not afford any additional information to that already reported by me, and in fact, are generally of the same purport as the reports of the District Superintendents of Police. Copy of a memorandum from the Hoozur Deputy Collector of Rutnagerry, forwarded by the Collector of that district, as containing a recital of some instances in which the ill effects resulting from the abuse of ganja have come under the personal observation of Mr. R. N. Dugla, is, however, appended for the information of Government.

No. 171, dated 27th January 1872.

From *W. H. Havelock*, Esq., Police Commissioner, Southern Division, Bombay, to the Acting Secretary to the Government of Bombay, Judicial Department.

I have the honour to reply to the Government Resolution, No. 4464, dated the 11th November 1871, calling for a report on the subject of the effect of the use and abuse of the several preparations of hemp, and the effect of ganja and bhang in exciting to the commission of violent crime.

2. I deemed it desirable in the first place to obtain the opinions of the local officers, and the following is the substance of the reports received by me up to date.

3. Captain Daniell, District Superintendent of Police, Ahmednuggur, cannot call to mind any cases of violent crime committed by any person under the influence of ganja or bhang. He has consulted his most experienced officers with the same result, and he adds his opinion that no measures for restricting or prohibiting the production or use of ganja or bhang are required in the Ahmednuggur District.

4. The District Superintendent of Police, Canara, Captain Wise, has not himself known of any man who, having indulged freely in ganja, has afterwards become mad, as he has not had the opportunity of making such observations, but, frequently, when making inquiries about madmen who have come under his notice as to the cause of insanity, he has received the answer that "he formerly took much ganja." This, Captain Wise remarks, is a very common answer, and natives consider it quite sufficient to explain the cause of madness; ganja

and bhang are, however, not much used in the Canara district. In the larger towns, from information obtained, he considers the average number of consumers of these drugs to be about 10 per cent. of the population. During Captain Wise's experience in the Police, he has not found that the regular consumers of ganja and bhang are given to committing violent crime. Men generally take these drugs until they are in a half stupid state, and not to excite themselves. He is aware that a man who has committed a violent act, run amuck, &c., is always said to be under the influence of bhang, and this may be the case, but Captain Wise doubts very much if such a man is one who is always in the habit of taking it, and rather thinks that in such a case it is the first occasion of his ever having been under its influence. Captain Wise is finally of opinion that the regular ganja or bhang consumer is a timid, harmless and very useless individual, who is ever in a half-stupid state.

5. Colonel Thomas, District Superintendent of Police, Belgaum, reports that the principal preparations of hemp are bhang and ganja. The latter is always smoked but never taken. Bhang eaten with water is called punniah, ghota or subja, and, taken with milk, it is called doodya. It is also eaten in the form of bojya, a mixture of poppy seeds, bhang and other articles pounded. All produce a form of intoxication or temporary insanity, bojya having the greatest effect, but not to such an extent as to excite a man to crime, except when taken in excessive quantity. But, Colonel Thomas adds, this very seldom happens; and as regards the Belgaum district, he does not think there is any necessity for making any change by legislation in the existing system of cultivation of the plant or its use.

6. The Acting District Superintendent of Police, Poona, Captain Daniell, states that no crimes of violence are on record as known to have been committed in this district by persons under the influence of ganja or bhang. His own police experience, and that of his subordinate officers, lead him to the conclusion that no restriction is called for, as regards the Poona district, in the use of the various preparations of hemp.

7. Lieutenant Hay, Acting District Superintendent of Police, Sholapoor, states that the use and abuse of ganja and bhang are not very prevalent in this district, and that the commission of violent crime under the influence of those drugs is of rare occurrence.

8. Major Johnstone, District Superintendent of Police, Rutnagerry, reports from inquiry made that it does not appear that any crime has been committed in this district under the influence of ganja and bhang.

9. Mr. Jones, Acting Superintendent of Police, Kulladghee, reports that from inquiries it appears that ganja is not much consumed in this district. The intoxicants most in use here are toddy and coarse country tobacco. The former, he adds, very often leads to bazaar rows among the consumers; and persons who smoke the latter frequently acquire a permanently 'fuddled' look and become weakened both in health and intellect; but he thinks the mischief ends there. Mr. Jones remarks that, so far as ganja is in use, its effects are the same here as everywhere. It is a fruitful source of insanity, owing, he supposes, to the violent stimulus it exerts upon the brain. Its effects appear to be, firstly, an active excitement of the entire nervous system, during which period, which is not, however, a long duration, any tendency to commit crime would be likely to gratify itself; and, secondly, a sedative effect. Both these effects are, Mr. Jones imagines, agreeable; but as with all stimulants, the after-effects are marked by extreme depression. This leads to a repetition of the dose and the circle completes itself. Hence he concludes that the use of the drug begun, it almost enforces its own continuance, and it assuredly cannot be persevered in without very bad mental and physical results as likely as not to lead to insanity or crime. On the other hand, ganja or Indian hemp possesses many valuable medical properties. European doctors seem to regard it chiefly as a cheap anodyne, useful in neuralgia and nervous affections, but rather apt to be uncertain in its results. The Indian hakeems, however, use it freely in cholera, dyspepsia, dysentery, impotency, and as a nervous stimulant generally, though in view of its powerful narcotic after-effects, the remedy in some of these cases seems rather two-edged. All Mr. Jones has consulted, however, agree that it would

would be a good plan to enhance the duty upon its consumption, as while yet leaving it cheap enough for all medical purposes, it would greatly tend to lessen its consumption as a mere animal stimulant.

10. From the inquiries of the Acting District Superintendent of Police, Sattara, Major Coles, it appears that no crime has been committed in this district under the influence of bhang or ganja during the last five years. Ganja is said to be produced in only one taluka, and about 10 per cent. of the inhabitants of the Sattara district make use of the drug.

11. It will thus be seen that the general local opinion is that the use of ganja or bhang, though in rare cases it may, by abuse, cause insanity, has not been productive of violent crime, and that the effects of these drugs, moderately used, are considered to be generally harmless, though stupefying in character.

12. I append a copy of an opinion given by Dr. Carter, Civil Surgeon, Sattara, on the subject, which will be found interesting.

13. The report of the District Superintendent of Police, Dharwar, has not yet been received, but it seems unnecessary to await it.

P.S.—Since this report was drafted the reply of the District Superintendent of Police, Dharwar, has been received. Captain Bartholomew's opinion confirms that of the generality of officers consulted. He summarises results as follows:—"The effect of the drug is stupefying and not exciting, and deprives men of all wish for active movement. It is not therefore likely to excite men to violent crime, and it is denied that it does so."

Dated 5 December 1871.

Memorandum by *H. Carter*, Esq., M.D., Civil Surgeon, Sattara, on effects of Hemp.

The preparations used are ganja (dried tops) for smoking, and bhang (dried capsules and seeds, &c.) also used in preparing drinks. Charas (resinous matter from the plant) is seldom employed in the Deccan.

2. In the city of Sattara the only licensed dealer estimates his monthly sales at the value of Rs. 100, in addition to which Rs. 15 worth is sold in the adjoining sudder bazar. The price is 2½lb. per rupee, which would give 40,000 doses of ganja for smoking in Sattara town per month, supposing ¼ tola were used each time.

3. All classes of the community make use of hemp, and all castes of Hindus, from the Brahmin downwards, but it is chiefly foreigners, as *purdesis*, and religious mendicants, as bairagis, gossavees, and Mussulman faquirs, who largely indulge, the first-named from custom, the latter from habit, and, it is asserted, for aid in assuming a state of ecstasy. Hemp-smoking appears to be resorted to as a soothing pleasure by strangers from home, by wanderers and the non-domesticated, and by those exposed to inclemencies.

4. The ordinary effects of hemp-smoking are reported to be mildly stimulant and subsequently narcotic. The practice in short corresponds to the combined tobacco-smoking and spirit-drinking indulged in elsewhere, and in general it may be said to be at least no more directly injurious to the body; probably hemp-smoking is less hurtful to the mind. Indulgers in hemp also prefer company, smoking together.

5. A physiological effect is said to be increase of appetite, especially for milk, sugar and ghee, and when the craving for such food, as well as for animal flesh, as mutton, can be satisfied, the frame does not undergo emaciation. The sexual faculties are not greatly affected.

6. Hemp may be taken in the form of a drink, and it is also eaten as a sort of sweetmeat, and then is said to produce more violent effects, such as mania; when smoked, garrulousness, noisiness, the use of abusive terms are the worst effects that commonly arise.

7. A form of insanity, may, however, ensue; thus, during the past year, a young Maratha policeman contracted the habit of hemp-smoking during the wet and cold season at the hills, and in three months began to show signs of mental imbecility, such as torpor, speechlessness, habits of straying, &c., which persisted for about four months, and have not returned since the habits were broken. I have known suicide to follow this indulgence. It is very seldom indeed that convicted prisoners are found to owe their crime to the use of this drug, and the evidence that acts of violence are similarly attributable is of the scantiest.

8. As strictly medical effects may be mentioned derangements of the circulation and respiration. I have known a strong man die in a few hours of acute bronchitis, when the more obvious cause of this complaint was this habit of hemp-smoking, and I am informed that this consequence is not very uncommon, as well as asthma in the aged. The nervous system is doubtless implicated.

No. 149, dated 4 December 1871.

Memorandum by *R. A. Dugle*, Esq., Deputy Collector, Ratnagiri.

Forwarded to the District Superintendent of Police.

2. Independently of the use of bhang and ganja for medicinal purposes, they are used or abused to a large extent as articles of luxury; gossavees and byragis among the Hindus, and faquirs among the Mahomedans, persons who are alleged to have left all wordly concern and who go about visiting places of pilgrimage and subsist by begging, use it openly. Many private persons are known to use it, but secretly.

3. Long and constant use of these articles has produced most injurious effects upon the human system. Delirium and its attendants, self-talking, too much talking, and violent behaviour towards comrades, are the ordinary effects, and I have known instances at Nassick in which a young man, aged about 20, became a harmful insane, and was sent to the lunatic asylum at Puna, where he died, and two others, aged about 30 and 25 respectively, committed suicide by drowning themselves in the river Godavery. Long before death they had left off using these drugs which they imagined produced no intoxication, but the previous use, or rather abuse, had so far deranged their system and brains, that they were inwardly extremely troubled, and life to them became loathsome. Such instances, however, are very rare, and it does not appear to be necessary to adopt any restrictive measures beyond those now in force.

No. 527, dated 12 February 1872.

From *A. Wright*, Esq., Inspector General, Indian Medical Department, Bombay, to the Secretary to the Government of Bombay, General Department.

With reference to Government Resolution No. 3118, dated 27 October 1871, on the subject of the effects of the use or abuse of the several preparations of Indian hemp, I have the honour to report as follow:—

1. Enquiries have been made from officers in charge of lunatic asylums and civil hospitals throughout the Presidency, and the information supplied is almost entirely the result of an examination of the records of these institutions and not of the personal experience of officers from cases examined and noted by themselves.

2. The officers in charge of lunatic asylums are unanimous in opinion as to the injurious influence of the several preparations of hemp, in producing insanity and exciting to violent crime.

3. Dr. Shepherd, Superintendent of the Colaba Asylum, states that during the past eight years 629 patients have been admitted, and of these 70 or 11·12 per cent. are cases which are recorded as resulting from the use and abuse of the different preparations of *Cannabis Indica*.

4. This

4. This opinion is shared by some civil surgeons of great experience, notably by Dr. Wyllie, of Ahmedabad, who states that out of 90 insanes examined on the 1st of April last, 18 are known to have habitually indulged in this drug.

5. But this opinion is not universal.

6. Dr. Sylvester, 1st Physician, Jamsetjee Jijeebhoy Hospital, reports, after examining the records of 16 cases, that the use or abuse of hemp does not, in his opinion, excite to the committal of crime or produce insanity, but rather leads to feebleness of intellect, emaciation, and tuberculosis.

7. Dr. Carter, Civil Surgeon, Sattara, to whom I am indebted for a thoughtful memorandum on the subject, says all classes of the community make use of hemp, and all castes of Hindus, and the practice corresponds to the combined tobacco-smoking and spirit-drinking indulged in elsewhere, and in general it may be said to be at least no more directly injurious. He adds that a form of insanity may, however, ensue, and relates a case in point, and he has also known suicide to follow the indulgence.

8. I think the weight of testimony is in favour of the view that the common and continued use of the several preparations of hemp is decidedly injurious.

9. But I am of opinion that there is not sufficient evidence of a direct kind, being the result of carefully recorded facts, to enable me to state with precision that the effects of this drug are so conspicuously and generally injurious as to warrant exceptional legislative action on the part of the Government.

10. One fact, I would add in conclusion, has come out very clearly from the enquiry into this subject, which is, that the people who indulge most in this drug, and who suffer most from the indulgence, are generally very poor "faquirs," or religious mendicants, so called, and people without a fixed home, or any ostensible means of earning a decent maintenance.

No. 959, dated 19 February 1872.

From *A. Rogers,* Esq., Revenue Commissioner, Northern Division, Bombay, to the Chief Secretary to the Government of Bombay.

I have the honour to acknowledge the receipt of Government Resolution No. 3118, dated 27 October, 1871. I have consulted the magistrates and the superintendents of police, and there is a general unanimity of opinion that in their experience the use of ganja and bhang does not excite to violent crime. One or two officers report that cases have occurred in which bhang has been administered chiefly in the form of sweetmeats to travellers who have afterwards been robbed, but the use of dhatura for this purpose is much more common.

2. Ganja is the prepared pulp of the buds of the plant and is mixed with tobacco for smoking. Bhang is the prepared leaves which grow just under the bud, and is mixed with sweetmeats or drunk with sugar and water. This is principally used by gossavees, bairagis, faquirs, to dull the pain of exposure and starvation, and is moderately used by Brahmins and prostitutes, and almost all other castes to induce a pleasant languor and stupor. A confirmed smoker does not usually exceed three chilums a day. Prolonged and excessive indulgence in the drug is said to induce a mild form of insanity, and casual indulgence to produce intoxication, but not of such a kind as would excite to crime, though it is remarked by Dr. Bainbridge, of Dhulia, that in persons addicted to the drug there has appeared to be a marked perversion of the moral faculties.

No. 207, dated 17 February, 1872.

Memo. by Colonel Sir *W. L. Mereweather,* K.C.S.I., C.B., Commissioner in Sind.

The Commissioner in Sind has the honour to submit, for the information of Government, a further précis of the opinions of several officers in the province, in continuation of his letter No. 1941, dated 28th December, 1871, on the subject of the use of ganja or opium, and its effects in causing the commission of violent crime, or insanity.

Further précis of opinion submitted on the effects of the use or abuse of the several preparations of hemp.

Lieut-Colonel Lambert, Collector of Kurrachee.

Forwards opinions on the subject from Mr. James, Deputy Collector, Schwan, and has nothing to add to them. Similar reports from the deputy collectors of Jerruck and Shahbunder, Mr. Tyndall and Lieutenant Mayhew, give no further information, and are not therefore forwarded. Mr. James states that hemp is used in four forms,—bhang, charas, ganja and majum; bhang consists of the dry leaves mixed with water to suit the taste of the drinker; a very small quantity suffices to infuse several gallons of water; ganja consists of the flowering tops of the plants, which are dried and smoked like tobacco; majum is made of dried leaves, which are soaked in ghee and water; they are then boiled till the water evaporates, and the sediment being strained, is mixed with different substances and formed into a sweetmeat. It is very strong, a tola's weight being the largest quantity that could possibly be eaten at a time. It is considered very aphrodisiac by the natives.

States from careful inquiries made that the effects of the drug are not very injurious; certainly they are in no way to be compared with those of opium; the chief disadvantage arising from much consumption is that the man loses all nerve, not his wits, and in bad cases men become less sharp than before. It is very useful as a medicine, when stimulants are required, and mixed with certain drugs acts as a purgative. It is believed that sudden and enforced cessation from the use of the drug is followed by a severe attack of dysentery. Does not know that bhang incites to crime; persons using it commit crimes like other people, and probably sometimes commit them under the influence of the drug; the action of it is, however, as far as can be learnt, the reverse of what it is generally supposed to be; it deters men rather than stimulates them to commit acts of violence. Consumers of bhang have the same craving for it as those who drink brandy or take opium, absinthium, or similar substances; the craving, however, is not so great as that of the opium-eater, who sometimes dies for want of the drug. If Government wished to raise an increased revenue from it the price should be raised by taxing cultivation. At present the farming of the right to sell it in the chief towns, where the sale is alone permitted, is the only way in which Government get any revenue from it. If the present system were continued, and the cultivator who sows the crop made to pay heavily for a license to do so, the revenue would be much increased; if judiciously done, the consumption would not diminish much. Thinks that a duty, Rs. 5 per maund, which would increase the price by one-half, would be sufficient. Does not advocate restrictive measures against consumption of the drug, it being, perhaps, the most harmless of its class, and if consumers were deprived of it, they might take to liquor or opium.

Lieut.-Colonel Phillips.

The Collector of Hyderabad is of opinion that the use of bhang or opium in Sind does not excite to commission of violent crimes, or that special legislation is necessary to restrict the use or retail sale of these drugs; and forwards the opinion of the

Captain Boulton.

Deputy Collector of the Tanda, who states that bhang is used in the preparation of an intoxicating drink, and from ganja a substance is made for smoking in a hooka; the effect of neither is exciting, but soothing and stupefying. Has not heard of the commission of any crimes by a person under the influence of bhang or ganja, and no case has ever come before him judicially; restrictive measures against production and use are therefore unnecessary; the use of them is injurious to health only, and very debilitating, but is harmless in regard to the peace of communities.

Major Dunstable.

The Collector of Shikarpur states that bhang, in the form chiefly used, appears to be as harmless in moderate quantities as malt-liquor, and when taken in excess, not more hurtful than spirits. Ganja and charas are used more by purdasis, than by natives of Sind, and always with a view to intoxication. States that the divisional magistrates do not regard the use of bhang in particular as producing insanity, or the

or the cause of violent crime; but an habitual drinker of bhang, when deprived of his potation, is believed to be irritable.

Mr. Bolton. The Political Superintendent, Upper Sind Frontier, forwards, without comment, the opinion of the deputy collector in the Frontier, who states that the use of ganja and bhang does not generally produce insanity; but in cases of abuse, partial insanity has been known to follow; has no doubt, however, that charas, ganja, and bhang have ruinous effects on the constitution by free use or abuse. Charas is commonly smoked in Hindustan, and both charas and ganja are preparations from bhang, which is greatly used as a drink in Sind; those who drink bhang in large quantites, have a thin, meagre appearance, with hollow eyes and cheeks. Smoking charas and ganja is said to produce violent cough, and eventually brings on consumption.

Dr. Miller. The Deputy Inspector General of Hospitals, after consulting the several medical officers in the Province, states that the records of the Lunatic Asylum do not afford any assistance on the point, whether the use of any preparations of hemp leads to insanity.

Mr. Balkristna. The sub-assistant surgeon in charge of the Lunatic Asylum states that bhang, when taken alone, does not, saving in exceptional cases, produce mental derangement; he has known hundreds of natives consuming large quantities of this preparation morning and evening, and continuing this practice for years, but none of them, so far as he could learn, ever became insane in consequence; but bhang when mixed with dhatura to enhance its narcotic properties and taken habitually, does certainly lead to mental disorder. Again, mental aberration is a frequent occurrence among those who have recourse to both bhang and opium. Ganja is chiefly smoked like tobacco, and from inquiries it appears that this preparation of hemp is not, particularly in the Hyderabad Collectorate, employed nearly so often as are the others, *i.e.*, bhang, charas, and majum. The class of people who chiefly use these narcotics are Mahomedans. Hindus incline rather to alcoholic liquors when seeking a stimulant; but with Mussulmans, in Sind, the cheapness, freedom from danger of fatal poisoning by an overdose, its unadulterated state, and the facility with which these drugs are procured, compared with opium, have caused them to be generally employed. Their effects medically are various, depending on the sex. Women, especially of immoral character, use bhang and majum pretty freely; they also affect the constitution and habitude of those addicted to them. In some, intense excitement is produced, which continues for hours together; the individual while under its influence, being very irritable and quarrelsome, and quite unconscious of what he does; others become morose and dejected, strange hallucinations are witnessed, and they flee from imaginary terrors and enemies, believing themselves pursued by fire, floods of water, or rabid animals.

The habitual use of these preparations, in whatever form, has the effect generally of exciting the worst passions, and leads their votaries to commit crimes of various kinds and degrees, although when offences of a more serious nature are meditated arising from jealousy, hatred, and revenge, opium is more frequently resorted to. In some instances of a sluggish temperament, the long use of these drugs, in whatever form, acts as a sedative, but that they never directly lead to insanity, the evidence is conclusive enough. States his opinion, however, that as the use of this class of narcotics is demoralising, and in many cases fraught with evil to the community at large, it is advisable to throw difficulties in the way of the seller and buyer by enhancing the duties on manufacture and consumption, or limiting the cultivation of the plant, and insisting upon the dealer keeping a list of the names of all purchasers for the information of the Police.

Captain McGillivray. The District Superintendent of Police, Shikarpoor, states that as no statistics were kept in his offices, he is unable to show how the use of intoxicating drugs acts on the brains; has no doubt they are injurious. Is of opinion that a tax on hemp would be a fair source of revenue, and perhaps check consumption.

Dr. Leaby. The Honorary Assistant Surgeon in charge, Sukkur Jail, states that his experience does not lead him to believe that the abuse of ganja often produces insanity or other dangerous

effects. Bhang is very much used by the people of Upper Sind, especially the lower classes. Mahomedans and Hindus are equally addicted to it. Brahmins and faquirs also use it, and women of immoral professions. It is more frequently used in the hot than in the cold season, and is in great demand on festive occasions. Charas is also smoked by some as a rule; those who use it take bhang; its effects are more quickly manifested than those of bhang. Majum, a sweetmeat composed of bhang, sugar, ghee, &c., is manufactured in the bazaars of Upper Sind, and is chiefly used by the wealthier class of people. Ascertains from inquiry that the moderate use of bhang does not injure the health; a liberal indulgence in it causes loss of appetite and thirst; it is denied that it ever causes insanity, or other violent excitement, or that it leads to the commission of acts of violence. It renders a man timid, and more likely to avoid a quarrel than to seek one; no native would think of taking bhang to prepare himself for any act requiring courage and nerve, but would rather resort to spirits or opium for that purpose. States it is not improbable that in many cases the evil effects ascribed to the use of bhang are due to the mixture with other substances. Is informed that a description of bhang, known as khoi-bhang, is obtained from Khorassan, the use of which is followed by maniacal excitement for several hours; this plant is described in the Indian Pharmacopœia (page 180) under the head of *Hyoscyamus Insanus;* the leaves are powdered, seeds of dhatura are sometimes mixed with bhang to render it more stupefying. On the whole, is inclined to think that the use of bhang is not more hurtful than spirits or opium, and that as an incentive to crime it has less to answer for than either of those articles. Dr. Lawrence is said to have published an interesting paper in the Madras Medical Journal (vol. VI., 1884, p. 274) on the prevalence and ill-effects of the use of bhang in the native army.

Summary of replies relative to the use and abuse of Ganja, Bhang, &c., and their influence in exciting to violent crime, received from the Judicial and Police Officers.

The police commissioner of Bombay reports that, as far as he is aware, no case of violent crime has occurred within the experience of the police in Bombay in which the cause has been traced to the influence of ganja, bhang, or any other preparation of hemp.

Surat.—The session judge of this district reports that in the criminal cases tried by him in his district he has not found the abuse of ganja and bhang shown to be the cause of crimes of violence, but intoxication, the result of indulgence in drink, appears to have accompanied, in various instances, the offences of causing hurt and effected or attempted rape.

Ahmedabad.—The session judge of this district reports that he does not remember any criminal cases coming before him in which he had occasion to make any inquiry as to the influence of ganja or bhang in exciting to violent crime, and that his assistant judges report to the same effect also; he is not, therefore, in a position to judge whether it is advisable to restrict in any way the use of those drugs, and states—

"Even if the consumption of these drugs could be virtually abolished by any restrictions, there would still remain many intoxicating liquors which are so cheap that no person need ever have the slightest difficulty in making himself intoxicated if so inclined. In order to be efficacious in the way of reducing crime, restrictions should be placed on all intoxicating liquors or drugs, and that in my opinion would be impracticable."

Thana.—The following are the observations submitted by the judge of this district:—

"1. The practice of smoking ganja and eating other preparations of hemp has existed in India from time immemorial, but is probably less in vogue in the Konkan and Northern Deccan than elsewhere. I am informed in the Thana Collectorate the increase in consumption of intoxicating spirits is diminishing the use of ganja. It is not within my memory that I have ever tried a case as session judge in which it appeared that the offence was committed under the influence of ganja.

"2. Ganja is used, as I am informed, chiefly by faquirs, gossavees, and bairagis, and by the lower class of Mahomedan population. The lower class of Hindus in the Konkan are as a body addicted to the immoderate use of spirits, which are sold at a very low rate.

"3. It would, I think, be desirable so to tax ganja, bhang, and other intoxicating preparations of hemp as to make them expensive. Speaking, however, for the Thana and Colaba portions of my judicial districts, I strongly recommend a much higher excise duty on the manufacture of spirituous liquor. It is within my experience that much violent crime is committed in this district under the influence of drunkenness. The very low price of liquor places its use within the means of the poorest class of the Katkaris, Mhars, Mangas and Kolis. It is well known the natives of India do not drink in moderation, they look upon the pronounced feeling of intoxication as the value for the money, and when intoxicated do unlawful acts, for which they often afterwards suffer; and which they would not have done if the opportunity of getting drunk had not been as it were offered to them."

Puna.—The judge of this district states that he is unable to furnish any useful information or opinion, as he has no idea that the abuse of ganja produces insanity and other dangerous effects, and cannot recall to mind any case that has come under his cognizance as a judge in which the commission of crime has been caused by the use or abuse of ganja.

Ahmadnagar.—The judge of this district reports that during the years 1869–70–71, no instances, as far as he can ascertain, have come before the session judge of persons having been stimulated to crime by the use of ganja or noxious preparations of hemp, and believes that the consumption of bhang and kindred drugs is comparatively small in his district; and states that instances occasionally occur of intoxicating drugs being administered to others, to faciliate the commission of crime by the administering person, and states two cases which appear on the records of his court of this description.

Belgaum.—The judge of this district reports that he is not in a position to give any opinion on the questions raised in the letter from the Government of India, as, since the establishment of his district in 1869, no criminal cases have come under notice in which ganja was used. The acting senior assistant session judge reports to the same effect.

Dharwar.—The judge of this district reports that since 27th August 1870, when he took up his appointment, only one case has come before him in which the crime (arson) was clearly traced to the habitual use of ganja by the accused, and states that the records of his court afford no information as to the effect of the use or abuse of the several preparations of hemp on crime in his district; that he is unable to give any information from personal knowledge, and consequently unable to offer any opinion as to whether the duty should be increased, or legislation is required for prohibiting or limiting the cultivation of the plant or restricting the sale of the preparations manufactured from it.

Sattara.—The judge of this district reports that he has met with no cases in which the use of bhang or ganja could have been suspected to have excited to violent crime, and that the people of his district, for the most part "Koonbees," are not generally addicted to the use of such drugs, and he remembers to have met with no case of any person who indulged in this habit.

Khandesh.—The judge of this district reports in very much the same way as the judge of Sattara as to the influence of ganja and bhang in exciting to violent crime, and that in his district preparations of hemp are not much used.

Canara.—The judge of this district states that he is at a loss to give any opinion on the subjects raised in the letter from the Government of India, as no cases have ever come under his observation, nor are there any such cases to be found on the records of his court.

Ratnagiri.—The judge of this place reports that he has no personal knowledge of the effects of ganja or bhang, and that he has seen nothing to lead him to believe that the consumption of the drug is a probable cause of crime. Forwards extracts from the opinion of his two subordinate judges, and states that, from inquiries made by him, nothing has come to his knowledge which

can lead him to believe that any repressive legislation is required, and that the sale of the drug in his district, he learns, is very small and limited to a few people.

Ahmadnagar.—The magistrate of this district is of the same opinion as the superintendent of police of the district (*vide* paragraph 3 of the letter from the Revenue Commissioner, Southern Division, No. 171, dated 27th January 1872, which forms an accompaniment to his letter No. 718, dated 10th February following, being one of the enclosures to the present communication).

Canara and Belgaum.—The magistrates of these districts are of the same opinion as the superintendents of police of their respective districts (*vide* paragraphs 4 and 5 of the above quoted letter of the Revenue Commissioner, Southern Division).

Puna.—The magistrate of this district reports that he is not aware of the occurrence of any cases in his district in which violent offences have been committed under the influence of bhang or ganja, and he does not, therefore, consider any restrictions on the various preparations of hemp necessary in his district.

Sholapur.—The magistrate of this district reports that ganja and bhang are very little used in his district, and that as an incentive to crime their influence does not appear to be appreciable.

Ratnagiri.—The magistrate of this district considers that the abuse of ganja does undoubtedly lead to insanity, sometimes of a dangerous description, but oftener to a harmless idiotcy. As regards the influence of ganja and bhang in exciting to violent crime, that the evidence is not so clear, and that no such result appears to follow in taking these preparations of hemp; they are not so widely used in the sea-coast as in the Deccan, and the few instances which do occur of their use are chiefly in the case of wandering gossavees and faquirs. He adds, "It is not improbable that persons meditating crimes of violence may fortify themselves by priming themselves with these stimulants, but they are not so notorious for their influence on crime as spirituous liquors."

Kulladghi.—The magistrate of this district reports that he has not been able to discover any instances of the use of ganja and bhang having led to violent crime or any crime at all in his district, and does not consider any restrictions necessary.

Dharwar.—The magistrate of this district reports that very little ganja or bhang is used in his district, and that from opinions received he is led to believe that, unless taken to excess, it has not been known to produce baneful effects; no case of its exciting to violent crime is known to have occurred in his district; and, as far as he is aware, the use of the drugs is confined to low Mussulmans and to men from Hindustan, and thinks probably more reliable information on the point may be obtained from the military and regimental hospitals.

Surat.—The magistrate of this district says that, in the opinion of those he has consulted, the use of ganja and bhang leads frequently to insanity and sometimes, in consequence, to crime, but not to any great extent. His own experience, shared in by others, is that the consumption of liquor in his district renders the consumption of ganja and bhang less common than it is in other districts, and he considers no preventive measures are necessary as regards cultivating the hemp plant.

Ahmedabad.—The magistrate of this district says—

"There is a general consensus of opinion on the deleterious effects of bhang and ganja, even so far as the producing of insanity, but there is no experience of serious offences having been committed under their influence. The assistant surgeon, now acting as superintendent of the lunatic asylum, has reported to the deputy inspector general of hospitals, northern division army, that 'from the history of many of the cases in the asylum, it is more than evident that ganja has been the principal cause of exciting insanity—in some it generally gives rise to acute mania.'"

Kaira.—The magistrate of this district reports that ganja and bhang are comparatively little used in his district, the inhabitants being more addicted to opium than to any other stimulating narcotic. Gossavees, faquirs, and other religious

religious mendicants use ganja and bhang to a certain extent as luxuries. He has no objection to urge against the enhancement of the duty on these drugs. The magistrates under him report that they have no evidence to show that the consumption of these drugs leads to violent crime.

Khandesh.--The Superintendent of Police states that for the past two years the police returns and reports do not show that the use of the different prepartions of the ganja plant has in any degree affected the state of crime in his district; and he is not of opinion that a person using the drug is more likely to commit an offence. The Magistrate of Khandesh, in forwarding copy of the above report, says he coincides in the opinion of the Superintendent of Police.

Kolaba.— The Magistrate of this district reports that from inquiries made by him it does not appear that the crimes of violence occurring in his district can be traced to excessive use of bhang and ganja.

Nassick.—The Superintendent of Police of this district states that almost every caste in his district indulges in bhang, but chiefly byragies, faquirs, gossavees, and all descriptions of beggars, as it helps them to take long journeys and deadens the pain of suffering and starvation. The Magistrate of Khandesh, in submitting the above report, states that the full-power magistrates in his district all say that they have never known a single instance in which violent crime has resulted from, or been attributed to, the taking of bhang or ganja; but it is stated that the use of these drugs is supposed to induce madness; their use is by no means very common in his district; and he considers no fresh measures for the restriction of the growth of the plant or the sale of its produce necessary, as the produce cannot be sold without a licence, and that this fact of itself is a great check on the cultivation of the plant, and Regulation XXI. of 1829 and Act III. of 1852 appear to him to give as much power as is needed to its retail sale.

The Inspector-General of Prisons reports that there are no recorded facts in his department showing the effects of the use of ganja as increasing the criminal population or exciting to violent crime. Most of the Superintendents of Jails write to say that they have no experience as to the extent the abuse of ganja proves an incentive to crime, and few of them seem to have had their attention drawn to the subject; but they attribute the increase of crime much more to the free use of country liquor than to the use of ganja.

No. 3863, dated 31st August 1872.

From *J. Ware Edgar*, Esq., Officiating Junior Secretary to the Government of Bengal, to the Secretary to the Government of India, Department of Revenue, Agriculture and Commerce.

In reply to your letter No. 340, dated 10th October 1871, and subsequent reminders, I am directed to submit copies of the undermentioned papers, namely,—

(1) Board of Revenue's Report, No. 377-B, dated 20th July 1871, paragraphs 1—24, with Appendices A and B.

(2) Board of Revenue's Report, No. 328-B, dated 31st July 1872, with enclosure.

(3) Abstract of opinions of local officers on the subject of the effects of the abuse of ganja.

I am also to extract paragraph 18 of this office report* on the taxation of Bengal; that paragraph runs as follows:—

* No. 2359, dated 3rd June 1872.

Ganja.

Paragraph 18.—"Ganja is a preparation from the hemp plant of a highly exciting character. A fixed duty is levied from ganja on a system which is much facilitated by the circumstance that the plant which produces the best drug is cultivated in a manner successful for this purpose only in the Rajshahye district and in part of the adjoining district of Bograh. The cultivation is free from taxation, but the growing crop is kept under supervision of the excise officer. The rules require the quantities cut and stored for sale to be registered. The cultivator can sell only to a licensed

licensed purchaser. The wholesale purchaser having received his licence from the excise officer of his own district, countersigned by the Rajshahye officer, exports the drug under excise supervision, and stores it in his own district still under excise supervision. It is not until he passes it out of his store to the different retail dealers that the excise officer levies the duty at the fixed rate. Up to 1853 the duty on ganja was levied either (1) by selling by auction the privilege by sale, or (2) by charging a fixed duty for each shop under the system described as the daily or monthly tax system.

"From that year a fixed duty of one rupee per seer (of about 2 lbs.) was levied, and the retailer was bound to pay the amount of tax on a certain minimum quantity per month, whether he succeeded in disposing of it or not. That was the system prevailing in 1856-57.

"In 1859-60 the duty was raised to Rs. 2 a seer, but levied only on the actual quantity passed out by the wholesale dealer to the retail shop-keepers.

"In 1869 the system was introduced of charging duty at three different rates, according to the manner in which the plant was prepared and packed, so as to equalise the incidence of the tax on the excisable portion of the plant. The rates fixed were Rs. 4, 3, and 2 per seer. These rates were in force until the beginning of the current year, from which time the rate on that which paid Rs. 2 has been raised to Rs. 2-8 per seer.

"The effect of the measures taken with regard to ganja has been to raise a very much higher revenue while checking the consumption of the drug. In 1856-57 above 17,000 maunds (of 40 seers each) were exported from the producing districts, and Rs. 4,66,965 of duty were paid on the drug; in 1859-60 the exportation had risen to 21,240 maunds, and the revenue to Rs. 6,44,963. In the following year (the duty having been raised from one to two rupees) the exportation fell to 13,000 maunds, but a still higher revenue, Rs. 6,77,000, was raised. During the last five years the consumption has averaged about 11,000 maunds and the revenue about Rs. 10,00,000 (100,000*l.*)

"Lately the tendency appears to be to a rise in the quantity sold, but this is being watched—it being the policy of the Government to raise the duty from time to time to as high a rate as is feasible without giving rise to an illicit trade."

2. The foregoing extract gives a general abstract of the manner in which the ganja revenue is raised, and the first of the appended papers gives a detailed and interesting account of the ganja cultivation and of the ganja revenue. The annexure to that paper gives a brief statement, which perhaps goes much further than any amount of opinions, to show that the ganja revenue in Bengal has been administered so as to raise a large and rapidly increasing revenue from a comparatively small and decreasing consumption of the ganja drug. Thus, in the period from 1853 to 1859, nearly 20,000 maunds of ganja were excised annually, and a revenue of about 4½ lakhs a year was secured. During the period from 1865 to 1870 the annual consumption of ganja has averaged under 10,000 maunds a year, and the average annual revenue has been about 10 lakhs. A part of Orissa is the only tract in Bengal outside the Rajshahye district where ganja is grown and used to any considerable extent for use as a drug.

3. With regard to the questions put in your letter under reply, the Lieutenant-Governor concurs for the most part in the replies given by the Board of Revenue, namely—

Answer I.—The excessive smoking of ganja does harm, and is believed to produce temporary insanity and loss of health. Officers in charge of lunatic asylums very generally believe that a considerable proportion of the lunatics under their charge have gone mad from excessive ganja smoking. Some of these insanes recover after some months or years of enforced abstinence from their favourite drug. At the same time the number of people who are known to go mad from excessive ganja-smoking are extremely small in comparison to the whole of the population; ganja has been getting dearer and dearer of late years, and it may fairly be presumed that even if there were no ganja to be had, a certain proportion of the population would go mad from the abuse of some other drug. A prohibition (on the principle of the Maine liquor law) against the use of ganja in any shape would be difficult to enforce; and if the prohibition were successfully enforced, some other drug would probably take the place of ganja.

Answer II.—The degree to which ganja excites to violent crime is not very clearly made out. It may be, and probably is, the case that men who have decided on committing a specific crime, to be accompanied by danger or violence, do fortify their bodies, or their spirits, or both, by the use of ganja; but it is not proved that the use or abuse of ganja alone disposes men to violent crime. If the intending criminals required a stimulant and could not get ganja,

ganja, they would probably take opium or some other drug. It is probably true that in Bengal criminals may often congregate in, and sally forth from, ganja shops to commit crime; so they do from opium shops or liquor shops in other parts of India, or from public-houses in London. The connection between ganja-smoking and violent crime is not so close or so strong as to warrant our prohibiting the use of ganja on that ground only.

Answer III.—As will be seen from the foregoing paragraphs and from the papers now submitted, the restrictions on the use of ganja in Bengal are very strict. The Board of Revenue and the Government constantly watch the consumption, and from time to time raise the price of (or duty on) ganja, wherever such increase seems possible, without unduly increasing smuggling. The people who grow ganja are under restriction; the wholesale dealers and retail dealers are licensed and watched; and the result, as above submitted, has been that the ganja consumed in nearly the whole of Bengal is now above 10,000 maunds, whereas 15 years ago it was 20,000 maunds. The excise duty on ganja will, perhaps, be still further raised in future years; but for the present it is proposed to leave the duty at its existing figure for the several classes of ganja.

Answer IV.—If, as is supposed to be the case, *carmalin* is the intoxicating or narcotising substance of ganja, then it would seem that the Bengal ganja grown in Rajshahye is not, so far as chemical analyses show, either much more or much less deleterious than the ganja grown in other parts of India. The Rajshahye ganja seems to be of a more equable strength than the ganjas of other parts of India; but this result is precisely what might have been expected from the fact that the Rajshahye ganja is all grown in one corner of a single district, on one system, and on the same soil. The proportion of *carmalin* in Rajshahye ganja is about 5 per cent.; the proportion in ganja grown or used in the North-Western Provinces ranges from 1·4 to 6·2 per cent.; the proportion of *carmalin* in Madras ganja ranges from 1·4 to 14·3 per cent.; the average of three specimens from the Bombay Presidency yielded about 7·5 per cent. of *carmalin*.

4. The Lieutenant-Governor regrets that he cannot satisfactorily explain why the Rajshahye ganja is so particularly acceptable all over Bengal. During the last week he has been on tour in the Rajshahye district, and has made such inquiries as he could from the officers on the spot. All he could ascertain was that the Rajshahye ganja plant does not grow to so great height as the same plant in other parts of India; the crop is confined to a small corner of the district, and the cultivation is very carefully carried on at a great expense and with some science, the male plants being preserved and the female ones destroyed. The Lieutenant-Governor at present has no means of judging why the Rajshahye plant is more acceptable—if it really be more acceptable—to ganja consumers than the ganja of other parts of India. But he inclines to think that the Rajshahye product is a finer and better grown drug than that produced elsewhere. He can only attribute the success—for, from an excise point of view, it is a great success—of the Bengal system to the Board of Revenue having at the outset fixed on the right district for encouraging the production of ganja, to their having kept the excise duty low at the outset, and to their having raised it gradually as the demand required. Some part of the success is, no doubt, due to the Bengalees paying more respect to Government regulations and rules in matters of this kind than they have sometimes been supposed to yield.

EXTRACT from a letter from *F. B. Peacock*, Esq., Officiating Secretary to the Board of Revenue, Lower Provinces, to the Officiating Secretary to the Government of Bengal, Revenue Department, No. 377-B., dated Fort William, the 20th July 1871.

Paragraph 1.—I am directed to acknowledge the receipt of Mr. Under-Secretary Wilson's letter No. 1913, dated 25th May last, in which the Lieutenant-Governor requests to be furnished in somewhat greater detail than is given in my letter No. 212-B., dated 29th April, with an account of the system under which ganja, taree, and pachwai are managed, as well as with certain information regarding the monthly tax system.

2. In reply, I am to submit the following report with regard to those articles, following the order in which they are enumerated above, and premising that much of the information respecting ganja herein contained was furnished to Government by the Board in their letter No. 89 of 5th February 1861. In order, however, that His Honour may have before him in a complete form the information he requires, such portions of that letter as were necessary have been embodied in the present report.

3. Of ganja, which is the male plant of the hemp, there are two kinds known in Bengal, one being very superior to the other. The first is largely cultivated in the districts of Rajshahye and Bograh, and in those districts only; the second is the produce of the Gujrat, in the Tributary Mehals of Orissa, and to a small extent of garden cultivation in the regulation districts of that province, particularly Pooree.

4. The plant in Rajshahye and Bograh is sown about August and cut in January. When prepared for sale, it is tied in bundles and conveyed to all parts of the Presidency by wholesale merchants or licensed retail vendors, under rules which will be more particularly alluded to further on. There are three different sorts of Rajshahye-grown ganja sold, on each of which a separate rate of duty is levied as shown in the margin; first, flat ganja, which is the plant dried as grown in its natural shape; second, round ganja, so called from the appearance which the rolling of each branch in the drying process, and the simultaneous removal of the thickest portions of the wood, gives it; third, rora or chur, which is only the fragments of the leaves and flowers. With regard to the duty it may be observed that, as the portions smoked consist of the leaves, flowers, and small twigs, the rate rises as the quantity of wood in the bundle diminishes.

1st, Flat ganja,	Rs.	2	per seer.
2nd, Round „	„	3	„
3rd, Chur „	„	4	„

5. The Gujrat ganja, which is much inferior in narcotic power to that grown in Rajshahye, is consumed only in the Tributary Mehals and in the districts of Cuttack, Pooree, and Balasore. The rate of duty on this kind is eight annas a seer.

6. Up to the year 1853 the excise surveillance of ganja was very imperfect in consequence of the impression that any restrictions would interfere with the cultivation of the plant for its fibre. Duty was levied, however, in the shape of a daily tax for the privilege of retailing it, but the wholesale trade was left untaxed, though the transit of the articles was watched by the excise department.

7. On its being ascertained that the cultivation of the hemp plant as an article of consumption was confined to a limited area of the Rajshahye division, which readily admitted of being brought under supervision, rules were framed for controlling the cultivation of the plant, for its storage, transport, and vend, and were sanctioned by Government in Orders, Nos. 330 and 594, dated respectively the 9th August and 29th December 1853. These rules, with such modifications as have since been introduced, will be found in Section 17, Chapter V., Board's Rules, pages 75–80.

8. As has been already stated in my letter, No. 212-B., of 29th April last, the cultivation of the hemp plant, whether for use in the green state for medical purposes, or for the manufacture of the fibre, is unrestricted; but the preparation of the plant to be stored, sold and used as a narcotic is prohibited, except under licences granted for the purpose, and for which no fee is payable.

9. An establishment is maintained, with the sanction of Government, in the centre of the cultivation to superintend the storing and sale of ganja. This establishment is employed under the Excise Deputy Collector of Rajshahye, which station has been selected as being more centrally situated as regards the cultivation than that of Bograh.

10. As soon as a cultivator has gathered his crop and prepared it for sale, he takes out the licence, alluded to in paragraph 9, from the supervisor of ganja cultivation to retain possession of the drug, until he sells it either to registered warehousemen in the producing districts, who sell to licensed vendors, or direct

to

to licensed vendors themselves. He is bound under the terms of his license, to report each sale to the supervisor, who notes down the particulars, and when the entire quantity is disposed of, he returns the license to the supervisor, giving an explanation of any difference between the amount of his produce and that of the sales. A cultivator cannot remove any ganja from his store to that of another, or receive any ganja from other cultivators without the supervisor's permission.

11. The licensed warehousemen who purchase ganja from the cultivator for the purpose of selling it to wholesale and retail dealers are required to register in the office of the Collector of Rajshahye, or other producing district, the warehouses in which the drug is to be stored, and file weekly in the office of the supervisor or other excise officer statements of the purchases and sales effected by them.

12. From these licensed warehousemen and from the cultivators, licensed wholesale merchants and retailers purchase ganja for export to other districts under passes granted by the Collectors of those districts and licenses granted by the Collectors of the producing districts. When passes are given, duplicates thereof are sent to the Collector of the producing district, who prepares the licenses and transmits them to the supervisor or other local excise office.

13. On the exporter reaching the place where he proposes to make his purchases, he delivers his pass to the supervisor or other local excise officer, and provided the license has been received, he can at once purchase and store his ganja in the place indicated to him by the supervisor or other local excise officer. The ganja is then weighed, packed, and sealed in bundles by the local excise officer, who returns the original pass to the exporter after having entered in it the particulars marginally noted, which are also endorsed on the duplicate pass which is returned by post to the district whence it was received.

1. Weight and number of bundles to be charged with single duty.
2. Weight and number of bundles to be charged with one and a half rates of duty.
3. Weight and number of bundles to be charged with double duty.
4. Distinguishing marks by which the bundles may be known.
5. Name of the purchaser and charandar.
6. Mode of conveyance, and the places, warehouses, or shops from and to which the transport is made.

14. When the ganja has been conveyed into the importing district, the excise officer examines the consignment and ascertains that the seals of the bundles are unbroken, and that the sorts and weight correspond with the weight and sorts noted on the pass, and the general condition in which the drug is received, whether dry or damp, or in process of deterioration or decay. Discrepancies between the particulars ascertained and entries in the pass are reported to the Collector, and full duty is at once levied on any deficiency of weight, and on any broken bundles. After this the ganja belonging to the wholesale dealer, as also the retailer if exceeding a month's consumption, is stored in registered warehouses and placed under the joint keys of the proprietor and the excise officer. Deliveries of the drug from these warehouses are made only in the presence of an excise officer and under order from the Collector.

15. Wholesale dealers are at liberty to transport under the prescribed pass any number of bundles bearing the original seal from their stock to any other district.

16. Duty on ganja exported by wholesale dealers from the producing districts, or from one district to another, is not prepaid, if the drug is to be imported into any district within Bengal proper. The retail vendors pay the duty before removing from the wholesale dealer's warehouse the ganja purchased by them. But ganja is not allowed to be exported to foreign* territory, or to any district not in the Lower Provinces, before payment of full duty. Ganja, when exported by sea to countries beyond the boundaries of British India, is not liable to duty, and any duty paid is refunded on proof of export.

* *Vide* Government Order No. 365, dated 13th February 1860.

17. As stated before, in paragraph 6 of this letter, duty used to be levied on ganja in the shape of a daily tax on its retail. From 1853 this tax was abolished, and duty at 1 rupee per seer was levied, and the retailer had to pay the full amount on a certain specified quantity in each month, whether he cleared or disposed of it or not. In 1859-60 the duty was raised to Rs. 2 a seer

Government Order No. 2952, dated 1st December 1859.

seer, payable on the quantity actually purchased by the retailer, and no more. At this rate duty is now only levied on what is called flat ganja, as has been shown in paragraph 4. On what is termed round ganja, a higher rate of duty, viz., Rs. 3 per seer, commenced to be levied in 1864 under the following circumstances. The duty had previously been calculated upon the gross weight of the plant, wood, fibre, leaf, and all included. In 1863, however, the Board brought to the notice of Government that the removal of the useless wood and fibre was necessary for the preparation of some forms of the drug, and represented that so long as the duty continued to be calculated in the manner just mentioned, a loss of revenue must necessarily accrue on the sale of such preparation of the drug. The average proportion of wood in the ganja plant in its natural state varies from seven to nine chittacks per seer ; but the Board proposed that the duty upon ganja artificially prepared should not be raised more than 50 per cent. above the standard rate, because it was believed that in any such preparation of plant then in use at least three and a half chittacks of wood per seer were necessarily left unremoved. At the same time, however, it was pointed out that should means be found of removing a still larger proportion of wood, the rate would have again to be changed. It was soon found that such modification was necessary ; for on the duty being raised on round ganja, the dealers almost immediately began to export from Rajshahye in considerable quantities a third sort of ganja, known as chur or rora ganja, from which all the woody fibre had been removed. When the duty was only 1 rupee per seer, the quantity of this description of ganja exported was inconsiderable, and appears to have been nothing more than the broken leaves, &c., that had accumulated in the preparation and manipulation of the other kinds. It now, however, became evident that this preparation was being largely resorted to by the dealers with the view of evading the incidence of the duty, and the duty on this sort was raised to Rs. 4 a seer, or double the standard rate. Since 1864 the duty has remained unchanged.

18. The price of which ganja is sold is left to be settled between the cultivator and his customers, between the wholesale dealer and retail vendor, and again between the retailer and the consumer. No interference on the part of the Government takes place in these transactions.

19 In Statement A., annexed to this letter, will be found particulars of the cultivation of Rajshahye ganja in the producing tract from the year 1853-54 to 1869-70, with the exception of some years, the figures for which are not available. In Statement B. is shown the quantity of that article exported to other districts, and the revenue realised from 1853-54 to 1870-71. It will be observed that, while the production and export of the drug is considerably smaller than it was in some of the earlier years shown in the Statement, the revenue has increased from Rs. 3,69,801 in 1853-54 to Rs. 11,06,768 in 1870-71.

20. It only remains, before passing on from this subject, to notice briefly what is called Gurjat ganja. This, as has already been stated, is grown almost entirely in the Tributary Mehals, from whence it is brought by licensed vendors under passes granted by the excise department at Pooree, stored in the Government godowns there, and passed out under the rules in force with regard to Rajshahye ganja for sale and consumption by the people on payment of duty at the rate of 8 annas a seer. The vendors, if they have not already a license for selling Rajshahye ganja, take out a separate license, for which they pay Rs. 2 per month. The subjoined statement shows the consumption of the article in Pooree, where it is principally used, though there appears reason for believing that under the name of puttee it is introduced untaxed into the other districts of Orissa by persons holding licenses for the preparation and sale of subzi, sidhi, or bhang.

Year.	Consumption.			Duty.		
	Mds.	*Sdrs.*	*Ch.*	*Rs.*	*a.*	*p.*
1867-68	18	31	8	375	12	0
1868-69	29	18	0	589	0	0
1869-70	32	11	0	645	8	0
1870-71	39	10	0	785	0	0

21. The present system of importing Gujrat ganja is defective, as it affords no check against this puttee (which appears to be nothing but flat ganja) being brought in any quantities ostensibly, in Cuttack at least, for the purpose of manufacturing sidhi, though in reality to be used for smoking in the same manner as round ganja imported from Rajshahye. The subject has for some time past engaged the attention of the Commissioner of the Division, and he has recently submitted some draft rules for regulating the importation and consumption of all ganja by whatever name called. These rules are now under Mr. Money's consideration.

22. Taree is consumed in two forms,—the fresh juice of the date tree, and the juice after it has undergone the process of fermentation. The rules under which the sale of each kind is regulated, and the fees payable for licenses, have already been given in paragraph 8 of the Board's letter No. 212-B of 29th April last

23. The use of the juice, either in the fresh state or after fermentation, by the owner of the tree, is not in any way interfered with; he is at liberty to consume as much or as little as he pleases, but he may not sell either the one or the other without a license. Should he do so, he renders himself liable to the penalty prescribed by Section 48, Act XXI. of 1856. When, therefore, a zemindar wishes to dispose of the produce of his tâl trees, he lets them to a Parsee, who takes out a license from the collector either to sell fresh or fermented taree. In the districts of the Patna division and in Calcutta taree in both forms is largely consumed. The revenue derivable from license fees for its sale in a fermented state amounted in the former to more than 3¼ lakhs, and in the latter to Rs. 37,652, during the year 1870-71, and for the sale of the fresh juice to Rs. 2,151 and Rs. 447 respectively. Fermented taree is also largely consumed in the districts of Monghyr, Bhaugulpore, Hooghly, and Cuttack, and to a smaller extent in nearly every other district in Bengal, except those of the Cooch Behar Division, where the date palm does not grow.

24. The fresh juice, judging from the revenue derived from the license fees during the two last years, is most largely drunk in the district of Sarun, where there were no less than 1,896 and 1,898 licenses granted during the years 1869-70 and 1870-71. The largest numbers granted in any of the other districts were 164 and 181 in Chumparun, 422 and 447 in Calcutta, and 95 and 91 in Hooghly, respectively, during the same two years. The member in charge is not aware of any special reason for the number of licenses granted being so much larger in Sarun than in any other districts, or, indeed, than all other districts put together; the Commissioner of the division will be, however, directed to make inquiries, and, if possible, the subject will be reverted to in the Board's annual report.

* * * * * *

A.

STATEMENT showing Particulars of Ganja Cultivation in the Producing Districts.

YEARS.	Quantity of Land estimated to have been Cultivated with Ganja.	Number of Ryots engaged in the Cultivation.	Quantity of Ganja estimated to have been Produced.	Average Production per Begah.	REMARKS.
	Beegahs.		*Beegahs.*	*Mds. Srs.*	
1853-54	2,623	2,416	37,840	14 22	
1854-55	2,100	1,449	15,266	7 11	
1855-56	Figures not available in office.				The blanks are caused by the fact that during these years no returns were received in the Board's office from the supervisor of ganja cultivation. Orders have been issued for the annual preparation and submission of a statement showing these particulars.
1856-57					
1857-58					
1858-59	2,099	1,670	19,840	9 18	
1859-60	1,799	1,435	13,973	7 19	
1860-61	1,930	1,412	14,955	7 30	
1861-62	1,854	1,547	15,438	8 13	
1862-63	1,424	1,081	9,985	7 5	
1863-64	Figures not available in office.				
1864-65					
1865-66					
1866-67	1,639	1,504	11,115	6 31	
1867-68	1,162	1,053	6,509	5 24	
1868-69	2,097	2,096	13,759	6 22	
1869-70	1,677	1,946	12,111	7 9	

B.

STATEMENT showing the Quality of Ganja Exported from the Producing Districts and the Revenue Realised.

YEAR.	Quantity of Ganja Exported.			Revenue Realised (Duty and License Fees).			Average Revenue per Seer.			REMARKS.
	Mds.	*Srs.*	*Chs.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*	
1853-54	—			3,69,801	—	—	—			
1854-55	19,157	5	6⅓	4,02,264	-	—	-	8	4	
1855-56	18,598	20	12¾	4,51,937	—	—	—	9	8	
1856-57	17,676	39	12½	4,66,905	—	—	-	10	6	
1857-58	19,625	24	15	4,96,310	—	—	—	10	1	
1858-59	22,367	22	7¾	5,68,471	—	—	—	10	2	
1859-60	21,240	12	10	6,44,963	—	—	-	12	1	
1860-61	13,015	23	14½	6,77,164	—	—	1	4	9	
1861-62	15,396	37	2	7,74,781	—	—	1	4	1	
1862-63	11,241	14	4	8,90,225	—	—	1	15	8	
1863-64	11,733	23	1½	9,55,554	—	—	2	—	7	
1864-65	10,068	18	0	9,76,511	—	—	2	6	8	
1865-66	9,663	8	15	9,55,891	—	—	2	7	6	
1866-67	7,592	13	4	8,10,346	—	—	2	10	8	
1867-68	10,530	13	0	9,73,176	—	—	2	5	—	
1868-69	11,506	14	5	9,68,010	—	—	2	1	7	
1869-70	10,192	38	10⅓	9,98,129	—	—	2	7	2	
1870-71	11,528	38	13½	11,06,768	—	—	2	6	5	

No. 328-B., dated 31st July 1872.

From *T. Walton*, Esq., Officiating Secretary to the Board of Revenue, L. P., to the Secretary to the Government of Bengal, Revenue Department.

I am directed to acknowledge the receipt of Government Order No. 4001, dated 30th October last, and its annexure, and, in reply, to submit the following report, after receipt of complete information on the several points touching ganja, required by the Government of India in the Department of Agriculture, Revenue, and Commerce.

2. These points are—

(1st.) The effects of the use and abuse of the several preparations of hemp.

(2nd.) The alleged influence of ganja and bhang in exciting to violent crime.

(3rd.) The necessity for further restrictions on the use of ganja.

(4th.) The difference in quality between the ganja grown in Rajshahye and in other parts of India.

3. On the first two points, all the Commissioners were requested by the member in charge to obtain the fullest information from the magistrates and civil surgeons of their divisions.

4. The reports of Dr. Wise, of Dacca, and of Dr. Bose, of Furreedpore, on the first point, which have already been sent to Government direct, are distinct in their observations and conclusions.

5. The various preparations of hemp are ganja, charas, sidhi, or bhang, sabzi, and majum; and the manner in which they are made is described by Dr. Wise. Both Hindus and Mahomedans use these drugs, and their consumption is limited, except in the case of ganja, which is sold almost in every district of Bengal, and is largely consumed by the lower classes to protect them from the ailments induced by damp and cold, and to relieve them from a sense of fatigue and hard labour. The Indian hemp in the form of ganja and sihdi is used for medicinal purposes, and is productive of benficial results in that respect.

6. The moderate use of hemp in some of its forms, it is said, produces a soothing and exhilarating effect, and a singular species of intoxication characterised by extreme gaiety and an irresistible tendency to laughter. No ill-

ill-effects attend the use of any preparation of the plant, save that form of it in which it is smoked as ganja. The constant use of this drug impairs the vigour both of mind and body, and renders those who are addicted to it liable to paroxysms of sudden and ungovernable rage. People addicted to ganja are generally peevish, hot-tempered, and easily offended.

7. The abuse of ganja-smoking is, moreover, generally stated to produce temporary insanity, and very serious ill-health, attended with loss of appetite and emaciation of body, while the excessive abuse thereof leads to permanent insanity. Dr. Wise has furnished with his report certain statistics of lunacy resulting from ganja-smoking, and the records of the lunatic asylums at Patna, Moorshedabad, and other places, if referred to, will, it is believed, show that in several cases the abuse of ganja is followed by aberration of mind. Mr. Reynolds, Collector of Mymensing, is the only officer who believes the ill-effects of abuse of ganja to have been much exaggerated.

8. On the second point, the answers of the officers consulted are generally agreed. They do not believe that violent crime is induced directly by the use of ganja and bhang. Persons charged with crime and misdeed often plead that they acted under the influence of these drugs, but their statements are untrustworthy and false. There is, however, very general testimony to the fact that the bad characters of a district are, as a rule, ganja-smokers, and that they probably often use the drug as a stimulant to work up their courage before setting out on premeditated robberies. The Commissioner of Patna observes that "this drug has often been given by designing men to those of weaker intellect whom they have induced to become their tools, for the performance of any great or violent crime. Ghazees, or religious fanatics, are usually well drugged with bhang when they have any dangerous work to do."

9. In regard to the third point raised by the Government of India, viz., the necessity for further restrictions on the use of ganja, the local officers generally agree that the interference of Government should not extend beyond the supervision now exercised by the Excise Department, that it is in every way sufficient, and that, by the regulation of the duty up to the limit which checks the consumption without encouragement to illicit dealings, the use of ganja should be kept within moderate bounds.

10. The duty on flat ganja has been increased from the commencement of the current official year; and the Member in charge will not fail to move for a gradual increase of the tax on ganja whenever it is advisable to do so. He does not consider, however, that any further measures are now necessary to restrict or repress the consumption of the drug, as in that case smuggling would increase, and a large number of people who are moderate consumers, would be denied the benefit they derive from the drug, and would be driven to equally deleterious preparations of bhang, which grows wild in many districts of Bengal. The public revenue would also suffer immensely, and no corresponding advantage would be gained.

11. With reference to the fourth point, relating to the difference in quality between the ganja grown in Rajshahye and in other parts of India, I am desired to state that many specimens of the drug have been obtained from the North-West Board, and the Presidencies of Bombay and Madras, and submitted to a full analysis by the Chemical Examiner to Government. Dr. Macnamara's reports,* copies of which are sent herewith, shew that the Rajshahye ganja is comparatively much milder than that grown in other parts, specially in the Madras Presidency, in many districts of which the essential or active principle of hemp is reported to possess much greater strength.

* No. 71, dated 11th June 1872, with annexure.
No. 78, dated 22nd June 1872, with annexure.

12. Referring to the last paragraph of the Government of India's letter, I am directed to state that no papers have been traced in the records of this office containing any information as to the effect of ganja in connection with the Law passed in 1824.

No. 71, dated 11th June 1872.

From *F. N. Macnamara*, Esq., M.D., Chemical Examiner to Government, to the Secretary to the Board of Revenue, Lower Provinces.

With reference to your letter No. 305-B of the 5th June, I have the honour to forward results of analyses of various specimens of ganja. The examination of the few remaining specimens will, I hope, be finished before the end of this week.

"Resinous extract of Indian hemp," or cannabin, is the active principle of the plant.

Results of Analyses of Samples of Ganja forwarded with letter No. 119-B, dated 1st March 1872, from the Secretary to the Board of Revenue, Lower Provinces.

		Percentage of Resinous Extract.
Bengal	1. Chur or Rora - - } Rajshahye - - -	3·9
	2. Round - - - } Rajshahye - - -	5·0
	3. Flat - - - } Rajshahye - - -	5·8
	4. Gujrat - - - } Orissa - - - -	3·8
	5. Pattee - - - } Orissa - - - -	2·3
North-Western Provinces	1. Mozufferpore - - - - - - - -	2·0
	2. Jhansie - - A. - - - - - -	1·8
	B. - - - - - -	3·4
	C. - - - - - -	3·8
	D. - - - - - -	2·1
	3. Jaloun - - E. 1 - - - -	5·8
	2 - - - - -	4·9
	3 - - - - -	6·2
	4 - - - - -	5·6
	5 - - - - -	5·6
	6 - - - - -	1·4
	4. Bareilly - - - These three were taken together, as each of them contains a very small quantity of the substance, not enough for analysis.	3·7
	5. Badaon - -	
	6. Moradabad - -	
Madras	1. Coimbatore - - - - - - - - -	2·9
	2. Tanjore - - - - - - - - -	1·5
	3. Salem district - Adai Ganja grown on the hills Trepatoor - - -	3·6
	Ganja with seeds—Trepatoor Taluk - - - -	3·5
	Ganja without seeds—Trepatoor Taluk - - -	1·8
	4. North Arcot - - - - - - - -	2·3
	Bazars of Arcot - - - - - - - -	5·2
	5. Godavery - - From Head Assistant, Collector	2·5
	„ Tehsildar, Coconada -	2·8
	6. Nellore - - - - - - - -	3·4
	7. Rajamundry - - - - - - - -	3·8
Bombay	1. Ahmednaggar - - - - - - - -	10·5
	2. Khandeish - - - - - - - -	5·3
	3. Sholapore - - - - - - - -	6·7
	Letter No. 193-B, dated 4th April 1872, from the Board.	
	Letter No. 146-B, dated 16th March 1872, from the Board.	
Madras	Trichinopoly—Nos. 1 and 2, but only No. 2 operated upon, as there was not enough of No. 1 - - - -	3·3
	Ganjam—Several small packets, with probably Teloogoo labels. Most of them contain a very small quantity. Some taken out of two of these and operated upon -	2·4
North-Western Provinces	Kumaon—Ganja, Bhang and Charas, all sent for analyses: only the Ganja operated upon - - - -	3·9
	Gurwal—not examined; too small a quantity sent.	
	Terai—Ganja and Charas; but only the Ganja operated upon - - - - - - - - - -	1·4

		Percentage of Resinous Extract.
	Letter No. 172-B, dated 28th March 1874, from the Board.	
Madras Presidency	Vizagapatam—No. 1	5·2
	„ No. 2	5·1
	„ No. 3	4·5
	„ No. 4	3·9
	„ Nos. 5 and 6 not examined owing to there being too small a quantity of each	
	„ No. 7	4·5
	Goruckpore, Bustee — A small packet without any label—not examined.	
	Azimghur — A tin box without any label—not examined.	
	Letter No. 211-B, dated 17th April 1872, from the Board.	
Madras Presidency	Kistna Ganja containing samples from A to H, all very small ones, except No. G, which was only taken for examination	8·8
	Malabar Ganja grown in a few amshoms of Cherikel Talukum. This contains three small packets, labels unintelligible, so only one of them taken	7·6
	Ganja grown in Urguad Taluk, Malabar, containing three samples	
	Pooresh Ganja (1)	7·3
	Chada Ganja (2)	12·0
	Koorooven Ganja (3) spoiled.	

F. N. Macnamara, M.D.,
Chemical Examiner to Government.

No. 78, dated 22 June 1872.

From *F. N. Macnamara*, Esq., M.D., Chemical Examiner to Government, to the Secretary to the Board of Revenue, Lower Provinces.

In continuation of my letter No. 71 of 11 instant, I have the honour to forward results of analyses of the remaining specimens of ganja sent with your letters Nos. 231-B and 245-B, dated the 26th April and 2nd May respectively.

Results of Analyses of Samples of Ganja forwarded with letters Nos. 231-B and 245-B, dated the 26th April and 2nd May respectively, from the Secretary to the Board of Revenue, Lower Provinces.

		Percentage of Resinous Extract.
	Letter No. 231-B, dated 26th April.	
Madras Presidency	Ganja grown at Poonamallee, Chingleput	5·5
	„ „ at South Canara	6·0
	„ „ at South Arcot	8·7
	Letter No. 245-B, dated 2nd May.	
Madras Presidency	Bellary—Hurpembally Taluk	10·1
	„ Penconda	6·7
	„ Bellary	9·9
	„ Dhurmsala	6·5
	„ Madaksira	7·9
	Attee and several other Taluks, all taken together, the quantity of each being too small for operation	5·5
	Kurnool—Kurnool, Mukeshpoor, Ramalla Kotee, all taken together	7·7
	Nandial	8·0
	Madura—A	14·3
	„ B—too small a quantity for operation	—
	„ C	10·3
	„ D	11·9
	„ E	6·1
	„ F	4·
	„ G	4·

F. N. Macnamara, M.D.,
Chemical Examiner to Government.

No. 2960, dated 16th May 1872.

Office Memo, from *A. Mackenzie*, Esq., Junior Secretary to the Government of Bengal in the Political Department, to the Secretary to the Government of Bengal in the Revenue Department.

With reference to the Memorandum from the Revenue Department of this office, No. 4002 of the 30th October last, the undersigned is directed to state that on receipt thereof the several Commissioners of divisions, the Inspector-General of Hospitals, and the Superintendents of Lunatic Asylums were requested to report on the effects of the use and abuse of ganja and other preparations of hemp. An abstract of their replies is forwarded herewith. It will be seen that the general opinion is that ganja is a favourite narcotic, which does, if used to excess, often cause lunacy; but that its consumption cannot much be restricted, for, even if Government gave up the large revenue derived from this source and stopped the culture of the plant, the wild ganja would still be used and do as much harm. Ganja does not seem of itself to incite men to crime, though it is often used to stimulate and embolden those who are bent on violent crime.

ABSTRACT.

EFFECTS OF ABUSE OF GANJA.

With reference to the frequent allegation that the abuse of ganja produces insanity and other dangerous effects, the Government of India wished a complete and careful inquiry to be made in regard to the effects of the use or abuse of the several preparations of hemp. The inquiry was not to be simply medical, but to include the alleged influence of ganja and bhang in exciting to violent crime; and if the result pointed to the necessity of restricting the use of ganja, &c., by enhancement of duty, or prohibition of the cultivation of the plant, India was to be advised as to the expediency and practicability of any such measures after a consideration of the question in all its bearings, and with reference to the whole policy of the Excise Department.

It was particularly to be ascertained whether, as was believed, the Bengal ganja, grown in the Rajshahye district, differed from, and was more deleterious than, the ganja produced in other parts of India. The Government of India wished also to be furnished with the substance of any papers that might be in the Bengal Secretariat or in the Board's Office regarding the inquiry which seems to have been made, about the period of the passing of Regulation VII of 1824, into the effects of the use of hemp and its preparations.

The Revenue Department of this office, in which India's letter was received, and from which the final report to India must be made, sent us a copy, with a request that the proposed inquiry might be instituted, and the result reported to that department. They have also called for a report from the Board of Revenue.

From this department reports were called for from the several Commissioners, the Inspector-General of Hospitals, and the Superintendents of Lunatic Asylums, with special reference to the medical and police aspects of the question.

The Inspector-General of Hospitals forwards two Reports from Dr. Bensley, the Civil Surgeon of Rajshahye; and Dr. Wise, Superintendent of the Dacca Lunatic Asylum.

No. 1152, dated 19th February, 1872.

No evidence of a decisive character has been obtained to show that the Rajshahye ganja is more deleterious than any other. The belief that it is so may have arisen from the injurious effects of the drug appearing more prominently among Bengalees than among the inhabitants of western India; but the real explanation of this phenomenon appears to be the greater facility and rapidity with which ganja works on weak and ill-nourished constitutions than on strong constitutions supported by milk, ghee, and other such nutritive food.

Dr. Bensley thinks that the effects of the abuse of ganja are more self-destructive to the individual than tending to lead him to commit crimes on others. Dr. Wise also is sceptical of the theory that ganja incites to crime; but that it makes the criminal bolder, more determined, and more reckless of consequences, he considers an established fact. Indeed ganja is said to intensify one's

one's thoughts, whatever may be the objects on which they are bent, and hence it is used by men of widely different characters for different purposes, to assist in religious meditation, to excite the imagination of the satiated sensualist, to raise the courage of the intending criminal to the point required.

Dr. Wise seems to believe that ganja sometimes produces insanity; but he does not think that in every case of a lunatic who was addicted to ganja his insanity certainly resulted from this physical cause.

Ganja is believed to have medicinal properties. It is used to relieve pain arising from whatever cause, and is prescribed by native physicians for colic and other spasmodic affections, for diarrhœa, dysentery, and cholera.

From Superintendent of Cuttack Asylum, No. 28, of 22nd November 1871.

During the last four years the admissions to the Cuttack Asylum, which were the result of ganja or were ascribed to it, ranged from 30 to 37 per cent.

From Superintendent of Asylums at the Presidency, No. 449, dated 27th November 1871.

Of 1,520 persons that passed through the Dullunda Asylum during the nine years, the use of ganja, as a cause of insanity, was traced in 768. The Superintendent admits that ganja may not be fairly chargeable as a cause of insanity in all the cases attributed to it, but many cases also, he says, are lost from the reckoning on the other side. He brings to notice that ganja-smokers and bhang-drinkers often add seeds of *dhatura* to the mixture, so that it is difficult to define exactly the cause of symptoms in any given case. He thinks that the result of restricting the use of ganja may probably lead to the more extended use of *dhatura* and of country liquor; but he, nevertheless, believes that a great amount of mischief could be prevented if ganja were put out of the people's reach.

Commissioner of Bhaugulpore, No. 316-Ct., dated 24th January 1872.

A few of the district officers in the Bhaugulpore division recommend an enhancement of the duty on ganja, but the generality of them and the Commissioner see no cause for the issue of any restrictive order. The abuse of ganja is not considered more injurious than the abuse of other drugs or spirits which, when taken in excess, produce insanity and the destruction of health. There is no evidence of ganja acting as an exciting cause to the commission of violent crime. Only one district officer knows of one case of violent crime *attributed* to it. It is believed to have valuable medicinal properties.

Commissioner of Assam, No. 27, dated 27th January 1872.

In Assam the district officers generally have no experience of cases in which the commission of violent crime has been traced directly to the influence of ganja, bhang, or other preparation of hemp, though it is believed that criminals have used them to muster up their courage. Hemp grows wild in Assam, but very few of the Assamese use the drug. Its consumption is almost confined to natives from Bengal or other parts. The Commissioner would reduce the quantity which travellers are now allowed to carry without being questioned. He does not consider any other restrictive measure necessary; but if the duty be raised in Bengal, it would be as well, he thinks, to extend the enchanced rates to Assam.

Commissioner of Chittagong, No. 474, dated 29th January 1872.

In the Chittagong division two magistrates against one are of opinion that the use of ganja is *not* an incentive to the commission of violent crime. It does not seem to the Commissioner that the addictedness to ganja has become so great an evil as to require special legislation to curb it or put it down. An enhancement of duty on ganja might, he thinks, tend to increase smuggling or the use of other non-dutiable preparations of hemp, such as bhang, &c.

Commissioner of Chota Nagpore, No. 338, dated 29th February 1872.
Commissioner of Chota Nagpore, No. 637, dated 5 April 1872.

The medical officers in Chota Nagpore, though they can give no authenticated cases, are under the impression that ganja consumers often become insane, and the Commissioner's opinion is in accord with this view. No opinion is expressed as to whether ganja or any other preparation of hemp excites to violent crime.

Commissioner of Patna, No. 74, dated 2nd March 1872.

In the Patna division none of the district officers have furnished reliable information on the influence of ganja in inciting to violent crime; but the Commissioner's experience makes him believe that the drug has often been given by designing men to those of weaker intellect whom they have induced to become their tools for the preparation of any great or violent crime. In the Patna Lunatic Asylum ganja-smoking is assigned as the chief cause of insanity in most of the patients, and

the Civil Surgeon of Shahabad has no doubt that the use of ganja and bhang for long periods, and in large quantities, is a frequent cause of mental derangement in this country. The Commissioner thinks that increase of the duty on ganja would only result in greater smuggling, and make the poorer people resort more freely to the wild hemp, which, though it does not possess the medicinal properties of the cultivated plant, may be, and is, used as a drug.

Commissioner of Rajshahye, No. 248-Ct, dated 9th March 1872.
Civil Surgeon, No. 74, dated 23rd March 1872.

The Commissioner of Rajshahye is of opinion that the use of ganja in moderate quantities is necessary to the labouring classes as a stimulant, and is beneficial to their health, though, when taken in excess, it has a most prejudicial effect on health, and on the mental faculties. The Magistrate of Moorshedabad states, after consulting the Civil Surgeon, that above 20 per cent. of the persons admitted into the Moydapore Asylum were rendered insane purely by ganja-smoking. The Civil Surgeon believes that this is under the true percentage, and that in several of the cases in which the cause of insanity was "unknown" ganja was probably the cause. As to the influence of ganja and bhang in exciting to violent crime, the Commissioner thinks that it produces the same result as other alcoholic or narcotic substances, though the records of past events do not show that it has any great tendency to increase crime. He believes, however, that a person meditating crime would resort to ganja as a stimulant to serve him, and he believes that its use is very general among dacoits as it was formerly among lattials. He does not think any measures necessary to restrict its consumption; such measures would only increase smuggling, and would deprive moderate consumers of the benefit they derive from the drug, and drive them to equally deleterious preparations of bhang, while the revenue would also suffer immensely without any corresponding advantage being gained.

Commissioner of the Orissa division, No. 972, dated 13th March 1872.

The magistrates in the Orissa division are generally of opinion that ganja-smoking excites to violent crime and produces insanity. The Commissioner has always looked on a ganja-smoker and a bad character as synonymous, and has, in his connection with lunatic asylums in different parts of Bengal, observed that in a large number of cases insanity had been induced by excessive ganja-smoking. He would not prohibit the culture or sale of ganja, but would discourage its indiscriminate and excessive use. He accordingly recommends that its growth should be prohibited, except in specified localities, to be kept under supervision; that the police should have orders to destroy the plants found elsewhere, and that a penalty should be inflicted for every repeated offence.

Commissioner of Burdwan No. 74, dated 22nd March 1872.

The medical officers in the Burdwan division are divided in opinion as to the effects of ganja in producing insanity. The magistrates generally do not consider it as a direct incentive to crime, though persons of bad livelihood often commit crime to enable themselves to indulge in ganja and such other expensive luxuries and stimulants. The drug has medicinal properties, but it is often used by the dissolute for purposes of the grossest sensuality. The Commissioner is of opinion that its use is most pernicious to its victims, and is indirectly and unintentionally in most cases one of the exciting influences to crime. He thinks that it is a wise policy to tax it as highly as possible without driving the people into the hands of illicit vendors and smugglers, and that, whenever an opportunity arises of gradually increasing the taxation, it should not be neglected.

Commissioner of Cooch Behar, No. 886, dated 25th April.

The records of the district officers in the Cooch Behar division contain no instance of crime committed under the influence of ganja or any other preparation of hemp. The Civil Surgeon of Julpigoree states that ganja causes mania, &c. The Civil Surgeon of Gowalparah says that it causes a kind of intoxication or delirium, and a sensation of wildness, followed by disposition to sleep; and that its continued use produces loss of memory, numbness and a want of power over the extremities. The Commissioner has seen many instances of persons becoming insane from the use of ganja; and he has no hesitation in saying that, though it may not directly stimulate to crime, it is used as a stimulus by those who intend to commit it. The murderer of the late Chief Justice appears to him to have been under the influence of this drug; and he traces the etymology of of the word *assassin* to a criminal sect who committed their murders under the influence of a preparation of this drug called *husush*.

He

He thinks, however, that it would be useless to attempt to repress the use of ganja, for it grows abundantly wild; and, though the cultivated description is preferred, yet if the latter were highly taxed the wild weed would be at once brought into use.

No. 1141, dated 9th October 1872.

From the Honourable *R. S. Ellis*, C.B., Chief Secretary to Government, Fort St. George, Public Department, to the Secretary to the Government of India, Department of Revenue, Agriculture and Commerce.

With reference to your letter dated the 10th October 1871, No 338, I am directed to forward copies of the reports * received from the Board of Revenue, the Inspector-General, Indian Medical Department, and the Inspector-General of Police, on the subject of the alleged influence which the abuse of ganja has in producing insanity or in inciting to violent crime.

* Pros., Board of Revenue, dated 4th May 1872, No. 716, with reports from the Collectors in original.
From Inspector-General, Indian Medical Department, dated 17th May 1872, No. 160, with two MS. enclosures.
From Inspector-General of Police, dated 19th January 1872, No. 179.

2. The use of the more pernicious preparations of *Cannabis Indica* is much restricted in this Presidency as compared with Lower Bengal and the Upper Provinces of India, as is evidenced by the data furnished by Dr. Balfour, the Inspector General, Indian Medical Department, who shows from the returns of the Bengal Lunatic Asylum for 1870, that 27·5 of the cases were due to the abuse of hemp, while in Madras they were only 4·6 per cent.

3. The Governor in Council is of opinion that the abusive use of hemp in this Presidency does not assume such proportions as to require protective legislation, and that there is no evidence that, as an incentive to crime, it is used to the extent to which arrack and other alcoholic preparations are used.

Extract from the Proceedings of the Board of Revenue, Madras, No. 716, dated 4th May 1872.

Read the following letters:—

From the Collector of Salem, 15th April 1872, No. 88.
" Commissioner of the Neilgherry Hills, 6th January 1872, No. 2.
" Collector of Coimbatore, 6th April 1872, No. 50.
" " of Tinnevelly, 22nd December 1871, No. 535.
" " of Madura, 5th April 1872, No 93.
" " of Trichinopoly, 22nd February 1872, No. 35.
" " of Tanjore, 24th February 1872, No. 82.
" " of South Arcot, 28th March 1872, No. 101.
" " of Chingleput, 6th April 1872, No. 139.
" " of Bellary, 3rd April 1872, No. 93,
" " of Vizagapatam, 19th March 1872, No. 183.
" " of Kistna, 18th March 1872, No. 949.
" " of Kurnool, 5th April 1872, No. 97.
" " of North Arcot, 1st February 1872, No. 37.

The letters above recorded will be submitted to Government, with reference to their Order dated 21st October 1871, No. 1598, Public Department.

2. The district magistrates who have reported up to this date are unanimous in the opinion that the use of ganja has nowhere been traced as an excitant to crime, and the magistrate of Salem declares that arrack is held to be the favourite stimulant of dacoits preparing for an expedition.

3. The general testimony is to the effect that the use of ganja is not common and that the cultivation of the plant is exceptional in most districts.

4. The effects of ganja on the consumer are rather vaguely described. Only one officer, the magistrate of Salem, positively connects the use of the drug with insanity, and that of a particular nature; he states that it is known to dispose to suicide. This part of the question, however, is purely medical. The Board are of opinion that there is nothing to connect the use of ganja with crime, and that it is clearly unnecessary to attempt any legal restriction on its consumption or cultivation.

5. The replies still due will be submitted as they are received.

No. 160, dated 17th May 1872.

From *E. G. Balfour*, Esq., Inspector General of Hospitals, Indian Medical Department, Madras, to the Chief Secretary to Government, Fort St. George.

I HAVE the honour to report, for the information of His Excellency the Governor in Council, that, on the receipt of the Proceedings of Government, No. 1,598 of 21st October 1871, a circular, copy of which is enclosed, was forwarded to all medical officers in this Presidency, requesting them to report the results of their experience as to the effects of the use and abuse of the bazaar preparations of Indian hemp. To this communication thirty replies have been received up to date, and I append a summary, in a tabular form, of the more important facts which the inquiry has elicited. As a whole, the reports which have been received are meagre; but mental or bodily disease resulting from the abuse of the hemp preparations is uncommon in this Presidency, and therefore, few Madras medical officers have had their attention directed to the subject. Copies of the more interesting replies are, however, attached.

2. *General history of Indian hemp, "Cannabis sativa."*—The botanical name of the hemp is derived from the term Kanabis, by which it was known to the Greeks, and the plant is a native of Persia. The variety known as *Cannabis Indica* is identical with *Cannabis Sativa* cultivated in Europe: but the plant as reared in the tropics yields little or no fibre, but contains a resinous product; whereas the European plant abounds in fibre, and produces only a very small quantity of resin. This resinous secretion gives to the Indian hemp its peculiar intoxicating and narcotic properties. Hemp has been used in India and the East from very ancient times as an intoxicating agent, and it is said to have been employed in China by a celebrated physician as an anæsthetic in the third century of the Christian era. He is reported to have used a mixture of wine and hemp powder, and by its means to have rendered his patients insensible to the pain of severe surgical operations. Rumphius in his "Herbarium Amboinense" notices the intoxicating effects of hemp as witnessed by him in the East, and calls it the "*Herba Stultorum.*" Linnæus speaks of its power as "*vis narcotica, phantastica, dementens anodyna, et repellens,*" and Dr. Royle in his "Illustrations," mentions various epithets applied to it by the Arabs as indicative of its effects and repute. These are "grass of faquirs," "leaf of delusion" "increaser of pleasure," "exciter of desire," and "cementer of friendship." The intoxicating effects of hemp are also popularly known in the north and south of Africa, in Turkey, Persia, Arabia, in South America, and in the Malay Peninsula. It is also known to the Burmese and Chinese; but both these seem to prefer opium as an intoxicating agent. A very interesting article on the products of Indian Hemp will be found in the Bengal Dispensatory of Dr. O'Shaughnessy, who was the first to test their powers and to introduce hemp to the notice of the profession as a medicinal agent.

3. *Bazaar preparations of Indian hemp, &c.*—In Southern India three preparations of the hemp plant are sold in the bazaars, *viz., ganja*, or the dried, flowering stalks; *bhang*, the dried leaves; and *majum*, a confection made from bhang. Of these three, ganja is the most commonly used in this Presidency, and the mode of taking a dose is as follows: A small quantity of the preparation is taken, slightly moistened with water, rubbed in the palm of the hand, and then put in a pipe and smoked. One pipe-worth of ganja used in this way, and weighing—at the rate it is sold in the town of Madras—fifty grains,

grains, is said by Honorary Assistant Surgeon Moodeen Sheriff to be sufficient to produce intoxication in one or two persons. The cheapness and potency of this preparation of hemp are doubtless the chief causes of its being more generally used than any of the other two forms. It is impossible to arrive at even an approximate idea as to the numbers addicted to its use; but from all accounts the habit of ganja-smoking would appear to be almost entirely confined to the lower classes, and chiefly to the more indolent amongst them, and in the little parterre or backyard of a faquir, a bush or two of the hemp plant is generally found growing. The active and hard-working amongst the poorer classes in Southern India, addicted to stimulants as many of them are, generally resort to some alcoholic beverage. Bhang is used in the shape of a drink prepared in various ways, and chiefly consumed by the better classes. There is no available information as to the extent to which it is used; but, as it is sold in nearly every village, probably a good many of the more strict Mahomedans and Hindoos, who would shrink from spirituous liquors, resort to it as a mild intoxitant. Majum is also generally exposed for sale, and appears to be chiefly consumed at night, with the double object of avoiding detection of the habit and securing the aphrodisiac effects of the drug, for which object the leaves are also applied externally. The Civil Surgeon at Cuddalore states that the custom of taking it at bedtime for the latter purpose is exceedingly common amongst the better classes of Hindoos in that part of the Presidency. On the whole, Mahomedans would seem to be more addicted to the use of hemp preparations than Hindoos, and to prefer ganja to bhang or majum. There is no evidence to show that any of the European or Eurasian population indulge in hemp, alcoholic liquors being the favourite stimulants amongst these classes. The use of hemp as an intoxicant seems, therefore, to be entirely confined to Eastern races, or those living within the tropics; and this is what might be expected, as it is only under a tropical sun that the *Cannabis* produces the peculiar resin which gives it narcotic and stimulant properties.

4. *Effects of the moderate use of Indian hemp:*

(*a.*) *On the mental faculties and nervous system.*—The immediate effects of a moderate dose of Indian hemp would seem to be as follows: A pleasant kind of intoxication is produced during which langour, dejection, or fatigue is banished; the mind is filled with pleasant ideas, which succeed each other rapidly; there is a tendency to boisterous mirth, which finds vent in singing, laughing, or dancing; the appetite is increased, and there may be some aphrodisiac excitement. The effects will of course, differ somewhat, according as the person has been accustomed to the use of the drug or otherwise, and according to the natural disposition of the individual. Thus, in some it seems to act as a calmative, producing a quiet contemplative mood, while others are rendered irascible and quarrelsome. After the stage of excitement the narcotic effects of the drug are manifested, the person feeling an inclination to go to sleep. Assistant Surgeon Moodeen Sheriff points out that the three bazaar preparations of hemp produces different kinds of inebriation. Briefly his remarks would seem to show that ganja produces a high degree of mirthful or emotional excitement; that bhang induces a quiet, contemplative, happy mood, and that majum has little or no exhilarating effect on the mental faculties, but is chiefly used as a calmative soporific, and probably as an aphrodisiac. Such are the effects of single moderate doses of the bazaar preparations of hemp, and it now remains to consider the results of the habitual use of these articles. From the appended tabular statement of the views of medical officers, it will be seen that they differ in opinion as to the effects of hemp on the mental faculties and nervous system, some believing that its prolonged use in moderate doses has no prejudicial effect, while others think that habitual indulgence is injurious. This diversity of opinion may perhaps be explained by facts brought forward in Assistant Surgeon Moodeen Sheriff's report, viz, that while the use of ganja is highly injurious, that of the other two preparations does not seem to be followed by any ill effects. It is quite possible, therefore, that the reporters, who believe that the prolonged use of hemp is innoxious may have only seen cases in which the milder preparations of the plant were indulged in. That confirmed ganja-smoking is injurious to the mental faculties and nervous system, seems beyond all doubt; but, from what we know of the results of the habitual

habitual use of other narcotics and stimulants, it may certainly be inferred that the confirmed smoker is not content with moderate doses of the drug. In the case of every one of this class of narcotics, habit gradually reduces their stimulant or narcotic effects on the system, and thus as the practice is continued, the dose must be increased to produce the desired effect. It is in this gradual increase that the great danger lies in the spirit-drinker and opium-eater, as well as to the ganja-smoker, and, were it possible for those addicted to such vices never to exceed in quantity or number the doses which can be tolerated by those unaccustomed to their use, there is nothing to show that indulgence would be injurious. When the appetite is once fully acquired, however, such control is extremely difficult, and the habits of opium eating and ganja smoking would appear to be even more seductive and less amenable to the dictates of reason and the influence of the will than spirit drinking. I believe, therefore, that in nearly every case the confirmed ganja-smoker greatly exceeds the bounds of moderation, and that from this circumstance the habit, in course of time, has a most injurious influence on the mind and nervous system generally.

5. (*b*) *On the general health.*—It will be observed from the tabular statement that very few of the reporters offer any opinion as to the effects of the moderate use of hemp preparations on the general health. Surgeon Joseph, M.D., LL.D., states that their continued use induces debility, and mentions that if a bhang-eater holds his arm in a perpendicular direction for two or three minutes the pulse at the wrist becomes imperceptible. This indicates enfeebled action of the heart, and another observer records the fact that those addicted to the use of the drug frequently suffer from palpitation. With reference to its influence on the digestive organs, Assistant Surgeon Moodeen Sheriff says that ganja is supposed by the smoker to improve the appetite and keep the bowels open. He is evidently of opinion, however, that such effects are only experienced during the earlier stage of the habit, as he immediately remarks :—"Whatever may be the actions of this drug at the commencement, its prolonged use produces very injurious effects on the system." Another reporter says that ganja-smokers suffer from dyspepsia, and are liable to phthisis and hæmoptysis, and the Civil Surgeon of Henzadah observes that the use of ganja or bhang in the long run proves injurious to health. None of the reporters, with the exception of Assistant Surgeon Moodeen Sheriff, allude to any difference between the ultimate effects of the prolonged use of ganja and of the other two preparations of hemp. He points out that, while ganja is very injurious, bhang and majum have no prejudicial influence on the general health. Regarding bhang, he observes: "The persons who are used to this drink" (prepared from bhang) "are generally in good and robust health, and have a voracious appetite, with an equal increase in the power of digestion." With reference to majum, he remarks : "It is free from the excitement and other bad effects of ganja." The general opinion of the several reporters is therefore, in effect, that although ganja-smoking may in the earlier stage of the habit increase the appetite and power of digestion, it ultimately has most injurious effects on the general health, which will be more particularly mentioned when noticing the results of the abuse of hemp preparations.

6. *Effects of abuse of Indian hemp*:

(*c.*) *On the mental faculties and nervous system.*—The general opinion of the reporters under this head is that the abuse or excessive use of preparations of hemp does in time impair the intellect and nervous system generally. Persons addicted to the vice gradually exhibit more or less marked imbecility or vacuity of mind ; they become careless or indifferent about their personal affairs and appearance ; they are irritable and quarrelsome, and may have hallucinations or illusions that may render them dangerous under excitement. It would also appear that an overdose or succession of large doses may induce a state of excitement, having all the characteristics of acute mania, which may last for some time, or shortly cease on the withdrawal of the drug. A case of this nature, which took some time to recover, is reported by Assistant Surgeon Hackett (No. 15 in tabular statement) ; another, recorded by Assistant Surgeon Boalth (No 13), recovered in three days. A very interesting and highly illustrative case is given by the Civil Surgeon, Cuddalore (No. 9 in tabular statement). A man whom he had daily seen for some time in the streets behaving

behaving as if suffering fron acute mania, and a known ganja-smoker, was sent to jail for a petty theft. On admission he was emaciated, much depressed in mind, and suffering from physical exhaustion. Of course no ganja was allowed during his incarceration, and in a week he recovered his mental and physical condition, and shortly became one of the most willing and best working convicts in jail. Surgeon Croudace (No. 7) records a case of catalepsy produced by smoking a mixture of ganja and tobacco. The cataleptic state lasted five days, and during this period "the limbs retained any position in which they were placed till moved again." Two of the reporters believe that the abuse of Indian hemp gives rise to organic changes in the cerebral structure, which seems highly probable.

7. (*d*) *On general health.*—The most marked effects of the excessive use of hemp on the general health and appearance are emaciation, general debility, sunken cheeks, staring eyes, dark lips, and a tendancy to diarrhœa or dysentery, which generally terminates fatally. Confirmed ganja-smokers are also subject to chronic bronchitis and other affections of the lungs, and Assistant Surgeon Moodeen Sheriff observes that he has "seldom seen persons of this kind not coughing repeatedly while smoking, or quite free from it at other times."

8. *Influence of preparations of hemp in exciting to violent crime.*—The views recorded under this head by medical officers are somewhat conflictory, and as none of them appear to be based on a very extensive series of personal observations or recorded facts, are not of much practical value. Surgeon H. Adam mentions that in the jail at Vizagapatam there are sixteen prisoners who confessed that they had been addicted to the use of hemp; but there is nothing definite to show that their crimes were the result of this habit, except in the case of one man whose intellect seems to have been impaired by indulgence in the drug. A case of petty theft which was committed at Cuddalore, while the delinquent was temporarily insane from the excessive use of ganja, has been already noticed in paragraph 6. But one instance of violent crime, attributed to over indulgence in ganja, has been recorded. This case, which is noted by Surgeon-Major Bretl, M.D. (No. 3 of tabular statement), was that of a Havildar of the 35th Regiment, who shot the adjutant of the corps, because he was disappointed in getting promotion, and committed suicide to avoid punishment. This man was reported to have been under the influence of ganja when he committed the crime. On the other hand, the surgeon in charge of the Madras Penitentiary states that there is nothing on the records of that jail to show that hemp preparations incite to criminal offences. From the evidence before me therefore, it does not appear that those addicted to the use of the bazaar preparations of *Cannabis* are more apt to commit ordinary or violent crime than those who exceed in the use of spirits or opium. The most that can be said is that ganja, &c., sometimes produce a species of maniacal excitement, and a person in this state may, of course, commit an act rendering him amenable to the law. Surgeon Adam says that, in the cases that he has seen during the past five years, while in charge of a jail, the "crimes committed by those addicted to the use of preparations of hemp have had more of a predatory than of a violent character." But while the use of hemp does not appear to be a direct cause of violent crime there seems some reason to suppose that men who meditate an offensive or violent act which they would not have the courage to undertake in cool blood, sometimes nerve themselves for the occasion by taking a dose of ganja. Thus, hemp may occasionally be indirectly the cause of crime.

9. *Influence of preparations of hemp in inducing insanity.*—That the long-continued or excessive use of these preparations is apt to induce insanity is very clearly shown by the returns in the annual report on the Bengal Asylums for 1870. The total number treated in these institutions during the year was 1,147, and of these, 316 cases, or 27·5 per cent., were the result of indulgence in ganja or bhang. The statistics of the Madras Asylum do not admit of strict comparison with these figures; but of 302 admissions into this institution between 1st January 1867 and the 31st December 1870, fourteen cases were reported to have been caused by the use of ganja, but in eight of these the cause was doubtful, as the evidence was only hearsay. But, assuming that all the fourteen cases were induced by the use of the drug, this would only give to the

total admissions a percentage of 4·6. From this it would appear that ganja-smoking is much less frequently a cause of insanity in this than in the Northern Presidency, and it may also be inferred that the vice is much less common amongst the people of Madras than amongst those of Bengal. Further evidence on the influence of the preparations of hemp in causing insanity will be found in column 7 of tabular statement and also in the reports of medical officers, attached.

No. 179, dated 19th January 1872.

From the Inspector-General of Police, Madras, to the Chief Secretary to the Government of Madras.

With reference to G. O. No. 1598, dated 21st October 1871, regarding the effects of the use of ganja, I have the honour to submit the following remarks on the subject, which are based upon reports received from district police officers. These reports coincide with my own experience of the matter.

2. There are sufficient data to show that the abuse of ganja not unfrequently produces insanity. At this moment I have the case of a police constable of the Ganjam district before me who is subject to aberration of intellect caused by excessive ganja-smoking, as testified by a medical certificate. Another constable in North Arcot is now under treatment for mania brought on by the abuse of ganja. In Nellore two cases of violent crime committed by persons under the influence of ganja are recorded. Both these persons were police officers, and the Superintendent of Police states that no less than seven other policemen of the Nellore District have at various times become insane from excessive use of this drug, and out of 47 cases (obtained by recent inquiry) of excessive use of ganja by private persons in various parts of this district (Nellore) insanity has already supervened in 23 cases. The Superintendent of Police, Vizagapatam, states that ganja is very commonly used among the lower classes, and that many, in consequence, suffer from temporary insanity. In 1867 a police constable of the Cuddapah district, when temporarily insane under the influence of bhang, murdered a beggar and stabbed the Tahsildar, against neither of whom he had any motive of malice. A person accused of a murder committed at Puther, in North Arcot, at the beginning of 1871, was declared by the Civil Surgeon to be of unsound mind, in his opinion, from the use of ganja or bhang.

3, With regard to the effect of ganja or bhang as a cause of crime, the Acting Commissioner of Police for the Town of Madras is of opinion that these stimulants, when indulged in largely, do excite to violent crime, but to what extent he is unable to say. He states that the criminal population of Madras town are addicted to these stimulants, and from observation in the penitentiary, it is believed that habitual criminals are most inveterate smokers of ganja ; sometimes they become violent under the influence of the drug. But on the other hand, the Commissioner of Police states that ganja-smokers are ordinarily very quiet, with a tendency to imbecility, the general effect of the drug being to stupefy rather than to excite, and that no cases of murder, grevious hurt, &c., are known to have occurred from this cause. The Acting Commissioner of Police states that he cannot quote instances, as the subject has not hitherto received attention. This in itself seems to show that the use of ganja has no marked effect in exciting people to commit crimes.

4. District police officers are unanimously of opinion that, save in very exceptional cases, ganja is not a predisposing cause of crime, although, when a crime has been resolved upon, the drug may occasionaly be used for the purpose of creating "Dutch courage." But it is said that for one crime committed under the influence of ganja, many hundreds are commited under the influence of intoxicating liquor.

5. I believe this to be the true state of the case. Dacoits and criminals of that class habitually stimulate themselves with arrack, which is far more suitable to the purpose than ganja, the effect of which is ordinarily soporific. But, in this respect neither the arrack nor the ganja are the primary cause of crime, and,

and, in my opinion, ganja can only be said to be the origin of crime is so far as it produces temporary aberration of intellect, under the influence of which an unpremeditated and purposeless crime of violence against the person may occasionally (though very rarlely) occur.

6. It follows that so far as the influence of ganja in exciting to violent crime is concerned, there seems to be no urgent necessity to restrict the use of the drug by legislative action. The other bearings of the question, which are far more important, do not fall within my province.

No. 66, dated 22nd January 1873.

From the Honourable *W. Hudleston*, Chief Secretary to Government, Fort St. George, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

In continuation of the letter from this Department, dated the 9th October 1872, No. 1141, I am directed to forward, in original, the Proceedings of the Board of Revenue, dated the 20th ultimo, No. 8477. submitting the report of the Collector of South Canara on the subject of the influence of ganja on crime.

Extract from the Proceedings of the Board of Revenue, Madras, No. 8477, dated 20th December 1872.

Read the following :—

No. 1471, dated 30th November 1872.

From *H. S. Thomas*, Esq., Collector of South Canara, to the Secretary to the Board of Revenue, Madras.

I have the honour to reply to Board's Proceedings, No. 4899, dated 1st December 1871.

2. Ganja and the other preparations of hemp seem to be useful medicines, pleasant drinks, and enjoyable smoking. Excessive use of them is apparently deleterious, but, as far as I can learn, the mischief done by their abuse can bear no comparison with the evil effects of too much alcohol.

3. The effect of these different preparations of hemp, though both exciting and soporific in different stages, are I understand, more the latter than the former. The chief sufferer therefore in the end, is the debilitated patient. No interdiction seems called for therefore, on police grounds.

4. Whether on sanitary grounds a Government is to interfere with a man's meat and drink is a very broad question. If it does, where is it to stop? There are abuses besides hemp-taking that produce insanity. The prevalence and increase of insanity in Europe, where no one uses hemp, is a terrible subject.

5. Hemp has other valuable use. I do not think that Government should interpose in any way to check the culture of a useful plant simply because one of its properties is sometimes abused. If hemp were discouraged, something else would be resorted to, for intoxicating liquors can be distilled from rice, and almost anything in a state of fermentation.

6. If the Government must interfere, it should do so to check the abuse, not the use. There is wisdom in the Chinese law that punishes a man severely for being so intoxicated as to lose his self-control, on the ground that he has reduced himself to the state of an animal, dangerous to his fellow-creatures; an animal that, were it not a human being, would be killed, but being a human being is spared and well-punished for the expense and trouble to which it has put the police in looking after it and prevent it from committing any violence or indecency.

7. Intoxication is much more a vice of the Englishman than the Asiatic. It is quite a national vice, and drunkards' stomachs are inherited, and the wild tribes we come across are demoralised and even exterminated by our fire water. Our example and our rule have made drunkenness more common in India than it was. With the Hindus, drunkenness was one of the five sins, and that ban not sufficing, the moderate use even of intoxicating liquors was prohibited during the Kali Yuga. The general enforcement of that prohibition our rule will not permit.

8. It would be acceptable to the people, it would be conducive to health, it would be advantageous in a police point of view, and it would be not difficult in operation if we introduced the Chinese principle by way of compromise, and visited intoxication with considerable and increasing fine.

9. But then it should include all intoxication, and not only that arising from the use of hemp, and should be levelled at that which is troublesome or dangerous to others.

10. Section 510 of the Indian Penal Code provides for this, but I think it does so somewhat inadequately.

11. Some interesting details are contained in the enclosed paper by my then head writer, Mr. S. Ball.

Submitted to Government in continuation of Board's Proceedings, dated 4th May 1872, No. 716.

Dated 13th September 1872.

Memorandum by *S. Ball*, Esq., on the Uses and Effects of the Hemp Plant, called by the Indians Ganja.

The dried hemp which has flowered is called ganja, the colour is dusky-green, and the odour agreeably aromatic. It grows to about three feet in height, and spreads to about two feet in breadth. At the tip of the branches a heavy bunch of leaves and flowers is found, the stem being nearly bare, or with a few solitary leaves here and there.

Ganja is used chiefly for smoking, beverages, pills or boluses, and medical purposes.

1*st, Smoking*.—A few heads of the plant are moistened with water, stalks and seed removed, and then pressed down on the palm of the hand with the thumb, and the water squeezed out. It is then placed in a chillum, or funnel-shaped earthen utensil, and filled to the stem of the hooka, or hudguddi, and smoked.

2*nd, Beverage*.—The stalk and seed are carefully removed and ground into a paste with jaggery or brown sugar, and dissolved in a small quantity of water and used by the poor as a ready agent of a pleasant drink. The well-to-do classes grind the above with sugar, poppy-seed, coriander, cotton-seed, and ginger, dissolve it in milk or water, and partake of it in the evening.

Ramrass—a pleasant drink—

Ganja, minus stalk and seed	Tola ¼,
Nutmeg	No. 1 or 1¼,
Cardamons	Pods 4,
Coriander	Tola 1,
Poppy-seed	,, 3.

Grind to a paste, dissolve in 1½ pint of water and an equal quantity of cow's milk, boil to the consistency of cream, sweeten to taste, and take two wine glassfuls.

3*rd, Pills or Boluses*.—The seed and stalk are removed, fried in ghee and ground with jaggery or brown sugar, and formed into large pills.

Effects

Effects—Smoking.—The novice retains his equilibrium for about half-an-hour after smoking, when the system becomes affected. It then makes him loquacious and frolicsome, but, after a short time, stupor and drowsiness overcome the smoker, and he sinks into sleep.

The habituated smoker has recourse to his weed occasionally, and requires it to induce sleep and to assist his digestive organs. The veteran smoker finds the herb too weak, and adds thereto a quantity of tobacco, which makes him a-going in 30 minutes. The after effects of hard smoking are lassitude, stupor, and nervousness. The last scene in the career of the dissipated smoker is dry cough, consumption, and general debility.

Drinking.—The beverage is slower in action, and its effects on the system are very peculiar; at first it creeps up the spine, causes hilarity, frolic, and wit; at other times it takes a different course, causes sorrow and timidity, and confuses the brain; and, lastly, ends in drowsiness and sleep. The after effects of the night's debauch are failure of memory and heaviness of the head.

Eating.—Swallowing.—The action of the bolus on the system is slower at the beginning, but its effects are nearly akin to that of the beverage.

Medicinal.—Native physicians prescribe small quantities of ganja in their rahlibs, and they are, on the whole, productive of good results to convalescents suffering from general debility, dysentery, and diarrhœa. People living in malarious localities derive benefit by having a smoke at the chillum or pipe before going to sleep.

The juice of the ganja plant, mixed with cocoa-nut oil and boiled and applied externally, is known to afford relief to people suffering from chronic rheumatism.

No. 113 G., dated 30th January 1873.

Endorsed by the Department of Revenue, Agriculture and Commerce.

Transferred to the Home Department for disposal, in continuation of Office Memorandum, No. 934, dated the 30th ultimo.

No. 3773, dated 17th December 1873.

Resolution by the Government of India, Financial Department.

Read the following Papers relating to an inquiry into the effects of the use of ganja and other preparations of the hemp plant:—

Financial Resolution, No. 3661, dated 20th September 1871.

Returned, in original, to the Revenue Department.

Circular issued by the Department of Revenue, Agriculture and Commerce, Nos. 338 and 339, and 341 to 347, dated 10th October 1871.

Letter from Chief Commissioner, Central Provinces, No. 444–27, dated 7th February 1872.

" " Chief Commissioner, Central Provinces, No. 2953–105, dated 19th August 1872.

" " Chief Commissioner, Mysore, No. 5651–46 G., dated 23rd February 1872.

" " Secretary to Government of the Punjab, No. 502, dated 10th April 1872, and Enclosure.

" " Secretary to Government of the North Western Provinces, No. 92 A., dated 20th April 1872.

" " Resident of Hyderabad, No. 6, dated 20th April 1872.

" " Secretary to Chief Commissioner, British Burma, No. 725–65, dated 3rd May 1872, and Enclosures.

" " Secretary to Chief Commissioner, Oudh, No. 3073, dated 8th July 1872, and Enclosures.

" " Secretary to Government, Bombay, No. 3069, dated 3rd August 1872, and Enclosures.

Letter from Secretary to Government, Bengal, No. 3863, dated 31st August 1872, and Enclosures.
" " Secretary to Government, Madras, No. 1141, dated 9th October 1872, and Enclosures.
" " Secretary to Government, Madras, No. 66, dated 22nd January 1873, and Enclosures.

Resolution.—In September 1871 the attention of the Governor General in Council was drawn to the deleterious effects alleged to be produced by the abuse of ganja and other preparations of the hemp plant.

2. The Local Government were thereupon requested to inquire into the use and abuse of the several preparations of hemp, with reference, not only to their effect upon health, but also to their alleged influence in exciting to violent crime. The opinion of the authorities was invited as to the expediency of restricting the use of these drugs, or even suppressing the cultivation of the plant.

The Government of Bengal was further requested to report whether there was any evidence to show that Bengal ganja grown in the district of Rajshahye differed from, and was more deleterious than, the ganja produced in other parts of India.

3. From the replies which have now been received, it appears that, though on some points the local officers are almost unaminous, yet on others there is wide disagreement. On the whole, the general opinion seems to be that the evil effects of ganja have been exaggerated.

4. The Government of Madras state that hemp is little used in that Presidency as compared with other parts of India. The Papers forwarded point to the opinion that the abuse of ganja tends to impair the intellect and nervous system generally; but there is no evidence to show that the drug acts especially as an incentive to crime, or is employed for that purpose. The Government of Madras, concurring with the Board of Revenue, are of opinion that the evil effects of the use of ganja have not assumed such proportions as to necessitate legislation.

5. Ganja is not extensively cultivated or consumed in Mysore, and its influence in exciting to crime is stated to be very slight. It is, however, reported that, out of a total of 280 admissions to the Lunatic Asylum in Bangalore during the past five years, ganja was assigned as the cause of insanity of 82 persons, of whom 64 subsequently recovered their reason and were discharged.

The Chief Commissioner does not consider that any special measures of restriction are necessary, but he recommends that the sale of ganja and similar drugs should not be permitted, except by vendors specially licensed for the purpose, and that the highest possible Excise duty should be imposed on them so as to limit consumption without encouraging smuggling.

6. The Resident at Hyderabad reports that the use of ganja and bhang in Berar is not extensive, that these drugs are resorted to either before or after the commission of a crime to strengthen the nervous system, and that their habitual use undermines and destroys the constitution, though it is not believed to be specially conducive to the commission of crime.

Mr. Saunders is of opinion that the abuse of these drugs is not so great in Berar as to necessitate any special legislative measures.

7. The Chief Commissioner, Central Provinces, reports that there is a considerable difference of opinion regarding the evil effects attendant on a continual indulgence in ganja-smoking. The people generally are said to be of opinion that continued indulgence inevitably leads to permanent insanity, but this opinion is not borne out by the statistics of the lunatic asylums. Of 317 lunatics received into the Nagpur Asylum since 1864, there were 61 in whom insanity had been occasioned by an immoderate use of ganja. Of these 10 have died, 28 have been discharged cured, and 23 remain uncured, and from this result it is inferred that excess in ganja-smoking does produce an insanity which is transient if the habit be relinquished, but otherwise permanent.

The

The superintendent of the asylum at Jubbulpore states that, out of 120 lunatics at present confined, 37 indulged in ganja-smoking, and he deduces from certain statistics which he has collected that there is only one lunatic from all causes for every 300 ganja consumers. The data on which these statistics are founded are not however given. The Chief Commissioner further reports that ganja and bhang do not act as direct incentives to crime, but that they are often taken by persons about to commit grave offences in order to brace themselves up for the dangers they may have to undergo. Several officers are stated to insist on the fact that the use of ganja is always injurious, never beneficial, and that in this respect there exists a material difference between ganja and spirits; but others assert, and with some show of reason, that persons, such as palki-bearers, whose employment subjects them to great exertion and fatigue, are enabled to perform the wonderful feats they not unfrequently do, by being supported and rendered insensible to fatigue by ganja, and that the use of ganja leaves in them no after-effects of an injurious kind.

It is admitted that the consumption of drugs has of late years materially increased in the Central Provinces, and fears have been expressed by district officers that since the introduction of the public central distillery system and the consequent rise in the price of spirits, many people who formerly drank spirits have taken to drugs as a substitute. At the same time, persons whose opinions are entitled to weight, declare that the tastes for spirits and drugs are independent and not affected one by the other.

Taking all the facts into consideration, Mr. Morris is of opinion that some action should be taken by Government to impose restrictions on the cultivation, possession and sale of ganja, and recommends that the cultivation of ganja without a license be absolutely prohibited, and that the issue of licenses be restricted to places where the cultivation and outturn could be checked by the ordinary revenue establishments.

The imposition of such restrictions would not, the Chief Commissioner thinks, be a matter of much difficulty in the Central Provinces, but to be effectual they must be extended to all contiguous provinces.

8. In Bombay ganja is said to produce insanity, but even in regard to this there is not unanimity, and the Government of Bombay, while desiring that ganja and bhang should be treated as other intoxicating drugs or spirits, and the present restrictions on their sale maintained, consider it unnecessary to take measures for the limitation or suppression of the cultivation of the hemp plant.

9. The Punjab Government report that the amount of crime that can be traced to the use of the preparations of hemp is exceedingly small, so small as to make it altogether impolitic and unnecessary to attempt to restrict the sale of the products of the plant by law.

His Honour the Lieutenant Governor states that, though harmless when taken in small quantities, the abuse of hemp may, and often does, produce mental derangement, and it appears that of the total number of cases of insanity treated in the Delhi Lunatic Asylum, a large proportion is due to the use of preparations of hemp.

This percentage in each year, from 1867 to 1871, was as follows:—

1867	11·92	per cent.
1868	16·61	„
1869	17·68	„
1870	20·60	„
1871	17·14	„

His Honour is of opinion that if people were prohibited from using the preparations of hemp and opium, they would, in all probability, have recourse to some other stimulant, such as alcohol, the crime resulting from the abuse of which would be much greater than that resulting from the abuse of those drugs.

10. The reports of the officers consulted in the North-Western Provinces disclose a wide variety of opinion, the prevalent impression being that ganja and charas are exciting in their effect as opposed to bhang, which is described as being lethargic. His Honour the Lieutenant Governor believes, however, that there is but a slender groundwork of facts for this opinion, and that even the returns of the lunatic asylums are based on hearsay reports and have no scientific value.

It appear to His Honour that if the effects of the use of ganja were nearly as bad as is sometimes supposed, either as inciting to crime or as injuring health, such a wide enquiry would have resulted in a more general and decided consensus of opinion and in the production of numerous facts bearing out that opinion. Accordingly His Honour does not recommend the adoption of any special measures to limit or stop the production of the plant. As it grows freely in the country lying along the foot of the Himalayas, and can be cultivated in every moist and low-lying tract, to prevent its production would, His Honour apprehends, be almost impossible.

It is further stated that as the duty on ganja is at present collected in the North-Western Provinces by letting in farm the right to sell the drug in each district or part of a district, it would be impossible to enhance the duty, unless the sale were made a monopoly, and treated by Government in a similar way to that of opium.

11. The Chief Commissioner, Oudh, reports that the conclusion to be drawn from his enquiries is that the evil effects of the use of hemp have been exaggerated ; that there is nothing to show that bhang, if used at all, must be used immoderately, or that, if used in moderation, it has mischievous consequences. Ganja, however, when used immoderately, is said to have a tendency to produce asthma.

The Chief Commissioner adds that, though the criminal class makes an immoderate use of these drugs, their consumption does not act as a direct incentive to violent crime, and they are merely taken by those about to commit crime in order to give them fictitious and temporary courage.

The Chief Commissioner believes that any interference with the cultivation and use of hemp and its preparations is not called for on moral grounds, and that arbitrarily to stop their use would merely drive the people to the use of still more deleterious drugs.

12. In Bengal the method of levying the excise duty on ganja differs from that in force in any other province.

A variety of the hemp plant grows wild throughout the whole or greater portion of the province, and another variety is cultivated to a limited extent in the Gurjat in Orissa, and its produce pays a duty of 8 annas a seer. The ganja produced from this plant is consumed in Orissa, but the amount so consumed which pays duty has never exceeded 40 maunds in one year. The variety of plant which produces the well-known Bengal ganja is cultivated only in a small portion of the Rajshahye and Bograh districts; the quantity of land devoted to its production every year being about 500 or 600 acres. Its cultivation requires much care, and the produce when prepared is stored and sold under excise supervision. The rate of duty payable per seer varies from Rs. 2-8 to Rs. 4, according to the quantity of wood mixed with it.

Before the year 1853 the duty on ganja was collected either by farming the monopoly of sale, or by requiring each seller of ganja to obtain a license and charging fees for these licenses. In 1853 a duty of one rupee per seer was levied, and this rate continued until 1859-60, when the system was introduced of charging duty at three different rates, according to the manner in which the drug was prepared and packed, so as to equalise the incidence of the tax on the intoxicating principle. The rates fixed were Rs. 4, Rs. 3, and Rs. 2, and these rates continued in force till the beginning of 1872–73, when the rate of Rs. 2 was increased to Rs. 2-8 a seer.

These measures have been highly successful, for while consumption has been checked, the revenue has been largely increased. The following statement shows

shows the quantity of ganja exported every year since 1854–55, and the revenue realised, both from duty and fees, on retail licenses :—

Year.	Quantity of Ganja exported.	Revenue realised (Duty and License fees).	Average Revenue per Seer.
	Mds. srs. cks.	Rs. a. p.	Rs. a. p.
1853 54 - - - - -	—	3,69,801 - -	—
1854-55 - - - - -	19,157 5 6½	4,02,264 - -	- 8 4
1855-56 - - - - -	18,598 20 12½	4,51,937 - -	- 9 8
1856 57 - - - - -	17,676 39 12½	4,66,905 - -	- 10 6
1857-58 - - - - -	19,625 24 15	4,96,310 - -	- 10 1
1858-59 - - - - -	22,367 22 7¾	5,68,471 - -	- 10 2
1859-60 - - - - -	21,240 12 10	6,44,963 - -	- 12 1
1860-61 - - - - -	13,015 23 14½	6,77,164 - -	1 4 9
1861-62 - - - - -	15,396 37 2	7,74,781 - -	1 4 1
1862-63 - - - - -	11,241 14 4	8,90,225 - -	1 15 8
1863-64 - - - - -	11,733 23 1½	9,55,554 - -	2 - 7
1864-65 - - - - -	10,068 18 0	9,76,511 - -	2 6 8
1865-66 - - - - -	9,663 8 15	9,55,891 - -	2 7 6
1866-67 - - - - -	7,592 13 4	8,10,346 - -	2 10 8
1867-68 - - - - -	10,530 13 0	9,73,176 - -	2 5 -
1868-69 - - - - -	11,506 14 5	9,68,010 - -	2 1 7
1869-70 - - - - -	10,192 38 10½	9,98,129 - -	2 7 9
1870-71 - - - - -	11,528 38 13½	11,06,768 - -	2 6 5
1871-72 - - - - -	10,433 26 8	11,40,329 - -	2 11 8
1872-73 - - - - -	9,336 10 15	11,89,706 - -	3 2 11

13. The Lieutenant Governor reports that the excessive smoking of ganja does harm, and is believed to produce temporary insanity and loss of health, and that officers in charge of lunatic asylums are very generally of opinion that a considerable proportion of the lunatics under their charge have lost their reason from excessive ganja-smoking. As the number of people who are known to have become insane from ganja-smoking is extremely small in comparison to the whole population, and as ganja has been growing dearer and dearer of late years, his Honour the Lieutenant Governor is of opinion that the absolute prohibition of the use of ganja is not called for, more especially as such a prohibition would be very difficult to enforce, and would probably have the effect of leading the people to have recourse to some other, and possibly a more hurtful, drug.

The connection between ganja-smoking and violent crime is reported to be not so close or so strong as to warrant the prohibition of the use of ganja on that ground, though it may be the case that men who have decided on committing a specific crime to be accompanied by danger or violence, fortify their bodies or their spirits, or both, by the use of ganja.

No satisfactory explanation has yet been given why the Rajshahye ganja should be more sought after than other sorts. It does not appear to contain on the average a larger proportion of the principle peculiar to the hemp plant than do other varieties, and it undoubtedly contains less than some of them, and his Honour is of opinion that it is more sought after simply because it is a finer and better grown drug than that produced elsewhere.

14. The Chief Commissioner, British Burma, reports that ganja is very little used by the Burmese, and that what consumption there is in British Burma is almost confined to coolies and immigrants from India. The Chief Commissioner is therefore in favour of absolutely prohibiting the consumption of ganja before a taste for it shall have spread throughout the province.

15. Upon a consideration of all the opinions thus collected; it does not appear to the Governor General in Council to be specifically proved that hemp incites to crime more than other drugs or than spirits. And there is some evidence to show that on rare occasions this drug, usually so noxious, may be usefully taken. There can, however, be no doubt that its habitual use does tend to produce insanity.

The total number of cases of insanity is small in proportion to the population, and not large even in proportion to the number of ganja-smokers; but of the cases of insanity produced by the excessive use of drugs or spirits, by far the largest number must be attributed to the abuse of hemp.

In Lower Bengal the circumstances have admitted of a system under which the consumption of ganja has been reduced one-half, while the amount of duty levied on it has been doubled. It would be very desirable to control the cultivation and preparation of ganja and bhang elsewhere in the same way. But it is believed that this would not be easy; indeed, it would probably be impracticable.

16. Moreover, with the exception of the Chief Commissioners of British Burma and the Central Provinces, the Local Governments are not in favour of altering existing arrangements. His Excellency in Council, however, trusts that the various Local Governments and Administrations will endeavour, wherever it may be possible, to discourage the consumption of ganja and bhang by placing restrictions on their cultivation, preparation and retail, and imposing on their use as high a rate of duty as can be levied without inducing illicit practices.

17. As regards British Burma, the Chief Commissioner has already been informed that the Governor General in Council concurs with him in thinking that the cultivation and consumption of ganja should be absolutely prohibited and it has been prohibited from the beginning of the year 1873–74.

Ordered,—that the foregoing Resolution be communicated to the Department of Agriculture, Revenue and Commerce, and the several Local Governments and Administrations.

Ordered also, that a copy be forwarded to the Home Department for publication in the Supplement to the "Gazette of India."

— No. 3. —

(Revenue, No. 99.)

Despatch from Secretary of State for India to the Governor General of India in Council, dated 20th October 1892.

My Lord Marquis,

I HAVE received and considered in Council the letter of your Excellency's Government in the Finance and Commerce Department, No. 212, dated 9th August last, respecting the consumption of ganja in India.

2. During the autumn of last year Mr. Mark Stewart drew attention in the House of Commons to the baneful effects of the above-mentioned drug, and suggested that the attention of your Excellency's Government should be invited to the expediency of extending to other provinces of India the prohibition against its use which has for some years been in force in Burmah.

3. You now point out that when the possession and sale of ganja was forbidden some years ago in Lower Burmah, "the drug was very little used by "the Native population, its consumption being almost entirely confined to coolies "and other immigrants from India," and "that the cultivation of the plant in "Burmah which had never been extensive had virtually ceased, the consumers "being dependent on importations for their supplies."

4. But as regards India circumstances are different In the first place hemp, throughout a great part of India is one of the commonest of wild plants, and its eradication would be impossible, and where this is not the case it could constantly

constantly be grown in spots which would be safe from observation and from the risk of detection. Even were it otherwise ganja and other preparations of the plant are produced in Native States and would inevitably find their way into British territories. Lastly, you explain that "India abounds with plants "growing wild from which drugs can be procured which are more deleterious in "their effects than ganja."

5. You are therefore of opinion that it would be impossible to enforce a general prohibition of the use of this stimulant, the more so as the practice of smoking ganja has existed amongst certain sects from time immemorial to the present day.

6. In this view I concur, as it would be obviously inexpedient to order a prohibition which could not be enforced, while there would be a continual danger lest the consumption should be merely diverted from recognised channels, the demand being met by an illicit trade.

7. But I observe with satisfaction that while you consider absolute prohibition to be impracticable, you deem it your duty to restrict the consumption of ganja as far as may be possible; and I have no doubt that you will impress upon Local Administrations the necessity of making every endeavour to "discourage the use of the drug."

I have, &c.
(signed) *Kimberley.*

REPORT of the CULTIVATION of, and TRADE in, GANJA in *Bengal*, by Mr. *Hem Chunder Kerr*, Deputy Collector, on Special Duty.

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APPENDIX A.

Statement shewing the number of persons engaged from year to year in the cultivation of Ganja, the area under cultivation, and the quantity of hemp produced in each year from 1854 to 1876 - 154

From Baboo *Hem Chunder Kerr*, Deputy Collector on Special Duty, to the Secretary to the Board of Revenue, L.P., dated Calcutta, 2 April 1877.

Sir,

With reference to the orders of the Government, I have the honour to submit the following Report on the Cultivation of, and Trade in, Ganja in Bengal.

Commencement of inquiry tour in Ganja Mahal.

2. On the 18th of October last I was relieved of my duties in Alipore, and reported myself to the member-in-charge; from that day to the 9th of November I employed myself in reading the records available in the Board's office, and bearing upon the subject of my inquiry. On the 10th idem I left for Nowgong, in Rajshahye, which was reached on the 17th. Making that my head-quarters, I went out frequently to visit all the important ganja villages, examined a great number of fields, held frequent conversations with, and collected as much information as I could from, most of the oldest and intelligent among the ganja cultivators, as also the wholesale goládárs' agents, the ganja brokers, and fariáhs. I also saw the mode of irrigating and manuring the lands grown with hemp, and how and where the drug was stored in the producing tract. I likewise observed the mode in which the drug was examined, weighed, packed, and sealed in the Supervisor's office; and, finally, I took notes of the procedure adopted in the earlier parts of the cultivation of the narcotic, making such experiments in the course of the inquiry as appeared necessary.

Tour in Monghyr, Patna, Arrah, &c.

3. When the hemp fields were being measured by my clerk and two extra ameens, I obtained the permission of the member-in-charge and visited, in January last, the districts of Burdwan, Beerbhoom, Bhagulpore, Monghyr, Patna, and Arrah, inspecting the ganja goláhs and taking notes of the system on which the hemp trade was carried on there, with special reference to the exportation of the drug from some of the Behar districts, on payment of duty there, to Jounpore, Benares, Allahabad, Mirzapore, and other places by the farmers of the drug maháls of those localities.

Return to Nowgong.

4. On my return from the western districts I proceeded back to Nowgong on the 28th of January, and stayed there for five weeks to complete my inquiries by direct observation of the reaping, storing, &c., of the hemp plant and the manufacture of ganja. Numerous measurements, weighments, and experiments were made at every stage of the inquiry, so as to secure reliable averages and trustworthy facts to the full extent necessary.

Return to Calcutta.

5. After a tour of three months and twenty-four days, of which nearly three months were devoted to Nowgong and about a month to Burdwan, Beerbhoom, Bhagulpore, Monghyr, Patna, and Arrah, I returned to Calcutta on the 4th of March. As the extent of inquiry required in the western districts was not large, the time devoted to it was necessarily short. It would have been of advantage if I could have personally examined the hemp fields of those districts and seen the process followed in the preparation of bhang, but I was pressed for time, and could not prolong my stay there for the purpose.

Inquiry in Calcutta.

6. On my return to the Presidency inquiries were instituted by me among the goládárs of the town, from whom, as well as from the Collector of Calcutta, I obtained much valuable information regarding the trade in ganja.

Names of hemp. Sanskrit names.

7. In my Report "On the Cultivation of, and Trade in, Jute in Bengal" (paragraphs 29 to 34), I have already given a brief sketch of the ancient history of hemp. The plant has been known in India from a remote period of antiquity, and is indicated by several very expressive synonyms. The earliest of these appear to be *bhanga*, which occurs in the Atharva Veda, the last of the four scriptures of the Hindus. It is derived

derived from a root which means "to break," and is supposed to imply the process of debarkation by which the fibres of the plant were separated from its stem, This would indicate that even at the remote period when the Veda in question was written—probably about three thousand years ago—the use of the hemp as a fibre-yielding plant was well known and the knowledge fully utilised. The Veda, however, reckons it along with the *soma*, one of the five plants "which were liberators of sin,"* and this would imply that its narcotic property was also well known. The word is used in the masculine form with a short final vowel, and not, as in later literature, with a long one. Both the masculine and the feminine terms are still in use by the people of the Himalayan regions, who call the male plant *Phul bhang* and the female *Gul bhangá*. In the Kaushitaki Bráhmana† of the Rig Veda, which is next in antiquity to the Atharva, the attributive form of the word *Bhanga*, derivable both from the feminine and the masculine forms, occurs both singly and in combination ; one *Bhángajála*, meaning a "hempen net," and another, *Bhâng-sayana*, a "bedstead woven with hempen cords." The masculine form occurs in the celebrated medical treatise of Susruta, in which the plant is described as a medicine for the accumulation of phlegm in the larynx, and for some other diseases.‡ In the Sanskrit grammar of Pánini both the masculine and feminine forms have been used. Words like *bhángya* and *bhângina*,§ "a hemp field," are derivable from either form, and *Bhangávija* "hemp-seed," and *Bhangákata*,‖ "hemp pollen," from the feminine. In the Institutes of Manu the feminine form is used, and the plant is noticed for its fibres. In later works the feminine form prevails, but in lexicological compilations both are given.

Next comes a group of names derived from the use of the plant as a narcotic calculated to fortify the courage of warriors, or as a sovereign specific for success in warfare, and these include *jayá* "the conquering," or "that which overcomes all painful feelings ;" *vijayá*, "the all-conquering ;" *ajayá*, "the invincible ;" *trailokya vijayá*, "the conqueror of the three regions of the universe" ; and *siddhi*, "the success giver"—all implying victory. *Virapatrá*, or "the producer of leaves which make heroes," belongs also to this class.

The third group indicates the intoxicating property of the plant. It is *ánandá*, "the joyous ; " *harshiní*, "the delight-giver : " *mádiní*, "the intoxicator ;" *chapalá*, "the causer of unsteadiness ; " *mátuli* or *mátulání*, "the wife of dhaturá apple," which is the most potent of narcotics ; *ganja* and *ganjákiní*, "the noisy."

The colour of the plant is typified in the name *bharitá*, "the green one." Its pre-eminence is indicated by two names—*indrásana* and *sakrásana*, "the worthy food of Indra," the Jupiter of the Hindus ; and its vermin-destroying quality by the term *matkunári*, from *matkuna*, a "bug," and *ari*, "an enemy." Its habitat is indicated by a single term, *Káshimiri*, meaning the plant of Káshmir ; but there is no evidence to show that its original locale was that valley, and that it has thence spread all over India. It is now common all over the lower Himalayan ranges, as it is on the plains. Possibly it was first brought into use in Káshmir, and thence the knowledge spread around. All these names, it will be noticed, are in the feminine gender ; and as these are obviously of later origin, the masculine form, which occurs in the Atharva Veda and other very ancient works, must be accepted as the oldest.

The words *gánjá* and *gánjákina* as applied to hemp are the most recent. In the older dictionaries they are explained to mean a tavern, a drinking bowl, an abode of the low ; and their application to the narcotic must be accepted as suggestive of the vile propensities of those who indulge in it. Some modern medical works use them as names of the plant under notice.

Biblical Names.

8. The term *shesh* used in the Bible has been interpreted by Drs. Eadie and Royle to signify hemp, though others say it is one of the synonyms of flax. The literal meaning of the word, however, in the Hebrew language, as given by lexicographers, is "to be cheerful and joyous," which favours the first interpretation.

9. The

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* पञ्च राज्यानि विरुधा सोमश्चष्ट तिन्नु स दर्भो मन्ना यव सहस्रे ना मुञ्चतं हस ।

† Kaus I, 14 : IV, 16 ; V, 17: ‡ B II, Chapter 11. § Pan, V, 2, 4. ‖ Pánini V, 2, 29.

Arabic name.

9. The Arabic name of the plant is *benj*, which is obviously a corruption of the Sanskrit *bhanga* passiug through the Persian *beng*. Some think the Arabic word to mean *hyoscyamus*, or henbane; but the description given by physicians, who say a plant "of which the leaves, the peel, and the seeds torpify," and the idiomatic form in which the *benj* is said to be "drunk," leave little doubt of the nature of the plant indicated. The common word for hemp in Arabic is *kinnab* or *konnab*, and physicians use it promiscuously with *benj*. It is now admitted to be the origin of the Greek *kannabis* and the Latin *cannabis*. The next name is *hashish*, which literally means "a green herb;" but the name has probably been applied to the drug from the green colour of the draught which is prepared from it, for it is usually in connection with the narcotic properties of the draught that the name is used. It is the same with the *bharitá* of the Sanskrit writers. Those who drink the draught are called *hasháshins*, or "green-draught-drinkers;" and the learned De Sacy rightly concludes that the English word *assassin* is derived from it, as it is well known that the assassins generally fortified themselves by over-indulgence in intoxicating drugs before undertaking the hateful task which has made them so infamous.* One Arabic name of the plant is *Hashisha affokra*, which has been translated in "L'herbe de Fakirs," the Fakir's herb; another is *keff*, and in praise of it Takyuddin Mauseli sings "arrête la main de chagrins par l'usage du *keff*: le *keff* est le remède des amans tourmentés par les soucis cruels;" another is *shahdánaj*, "the royal grain," from *shah* "a king," and *dânah* "grain" or "seed," which is the counterpart of the Sanskrit *Indrásana*, "the food of Indra." A variety of the hemp is called *kunnab hindi*, or "Indian hemp," but which it is I have failed to make out. There are a number of other names—such as mean the "grass of fakirs," "the leaf of delusion," "the increaser of pleasure," "the exciter of desire," the "cementer of friendship," &c. —of a highly poetical character, all indicating the intoxicating power of the herb, but they need no detailed enumeration.

European names.

10. The Greek name of hemp is *kannabis*, which is obviously borrowed from the Egyptians, who must have got it from the Arabs. But the borrowing must have taken place at a very early age, for it is now believed by many antiquarians of note that the "nepenthe" or the soporific spiced drug which Helen is described in the Odyssey† of Homer to have handed in a cup to Telemachus, and the preparation of which she says she learnt from the Queen of Thebes in Egypt, was no other than the *siddhi*. Others stoutly deny this, and a good deal of ingenuity and scholarship have been wasted on the dispute.

A very suggestive explanation may be given of the etymology of *kinnab*, which bears upon the early history of the plant. The Persian *beng* and the Sankrit *bhanga* or *bhangá* are derived from the same root, and the former seems to be an abraded form of the latter. The word *kinnab* is but the rough and sharp reading of *bhang* or *bang*(*k*)‡ from right to left, which is the Semitic mode of writing. This would throw some light (though by itself it would be but slight) upon the early migration of the plant from the primitive home of the Aryans to the Indian Himalayas, thence to Persia and Arabia, and to other regions of Asia and Europe, and thence to different parts of the world.

The Italians have made it *canape*, the Poles *konopj*, the Russians *konoplia* or *konopel*, and the Spanish *canamo*; but the French, who, as Gauls, it is said, brought the plant to Marseilles from Thrace, have disguised it as *chanvre*, which, however, with the last two letters dropped and the *ch* pronounced hard, would be *kanv* (or *kanb*). In the Germanic and Scandinavian groups the initial letter has become *h*, which is the first two letters of *chanvre* aspirated, and in the Icelandic it is *hanfr*; Swedish, *hampa*; Danish, *hamp*; (O.H.) German, *hanuf*; (N. H.) German, *hanf*; Dutch, *hennup*; Anglo-Saxon, *henep*; and English, *hemp*.

The

* Vide *passim* Lane's Arabian Nights and Arabic Lexicon, Von Hammer Purgstall's "Contes Inédites des Mille et Une Nuits," and De Sacy's "Chrestomathie Arabe."

† Od. IV., 1, 22.

‡ The Arabs substitute *k* for *g*, which letter is wanting in their alphabet. The borrowing of Sanskrit words by Arabian writers, specially those used in science and medicine, is a well-known fact.

The following is a list of all the names of hemp known to me;—

Anglo-Saxon	Henep.
Arabic	Kinnab or Kounab.
Ditto	Hashish.
Ditto	Shahdánaj.
Ditto	Keff.
Barbari	Fasukh.
Bengali	Gánjá.
Ditto	Siddhi.
Ditto	Bháng.
Bombay	Fasukh.
Burmese	Bin.
Ditto	Ben.
Chinese	Mafuen.
Ditto	Chutsao.
Danish	Hamp.
Dukhini	Gánjá.
Ditto	Sann.
Dutch	Hennep.
Egyptian	Sjaránk.
Ditto	Sejdanak.
English	Hemp.
French	Chanvre.
German N. H.	Hanf.
Ditto O. H.	Hanaf.
Ditto	Kannabis.
Greek	Kannibas.
Guzrati	Sann.
Hindi	Bhang.
Ditto	Gánjá.
Ditto	Phulbhang (male).
Ditto	Gulángá or Gulbhangá (female).
Icelandic	Hanpr.
Italian	Canape.
Javanese	Gindshi.
Latin	Canabis.
Ditto	Cannabín.
Malayalam	Ganjá.
Malayalam	Lacki-lacki.
Ditto	Jeru kansjava.
Persian	Beng.
Ditto	Kunnab.
Polish	Konopj.
Russian	Konoplia.
Ditto	Konopel.
Sanskrit	Ajayá.
Ditto	Anandá.
Ditto	Bhanga.
Ditto	Bhangá.
Ditto	Bharitá.
Ditto	Chapalá.
Ditto	Gajásana.
Ditto	Ganjá.
Ditto	Ganjákiní.
Ditto	Harshiní.
Ditto	Indrásana.
Ditto	Jayá.
Ditto	Matkunári.
Ditto	Mátulí.
Ditto	Matulání.
Ditto	Mádiní.
Ditto	Sakrásana.
Ditto	Sana.
Ditto	Trailokya-vijayá.
Ditto	Vijayá.
Ditto	Virapatrá.
Singhalese	Matkansha.
Spanish	Canamo.
Swedish	Hampa.
Tamil	Sann.
Telegu	Ganjayi.
Uriyá	Gánjai.
Ditto	Ghádá.
Ditto	Kusumu.
Yunani	Kinnabis.
Ditto	Defroonoos.

11. It is on record that a knowledge of the uses of hemp, both for its fibres and for its narcotic properties, was possessed by the ancient Thracians and Scythians. Of the former Herodotus says,—"They have amongst them a species of hemp (*kannabis*) resembling flax, except that it is both thicker and larger; it is indeed superior to flax, whether it is cultivated or grown spontaneously. Of this the Thracians make themselves garments, which so nearly resemble those of flax as to require a skilful eye to distinguish them; they who had never seen this hemp would conclude these vests to be made of flax."*

Early Greek Notices.

Hesychius, quoted by Larcher in his annotations on the above passage, says that "these garments were doubtless worn only in summer." These clothes seem to have been the same as the *bhangelá* wrappers of the hillmen of the Himalayan regions.

Herodotus says again, "The Scythians take the seed of this hemp and, placing it beneath the woollen fleeces we have before described, they throw it upon red-hot stones, when immediately a perfumed vapour ascends stronger than from any Grecian stove. This to the Scythians is in the place of a bath, and it excites from them cries of exultation. It is to be observed that they never bathe themselves. The Scythian women bruise under a stone some wood of the cypress cedar and frankincense. Upon this they pour a quantity of water

* Herod. Melp. 74.

water till it becomes of a certain consistency, with which they anoint the body and the face. This at the time imparts an agreeable odour, and, when removed on the following day gives the skin a soft, beautiful appearance." * Larcher, departing from the rendering of Beloe, translates the phrase in the original of the above passage (Αγάμενοι τη πυρίη) into "stupified by this vapour," and observes, "I understand by this the stupor or sort of intoxication occasioned by the vapour; and such was the opinion of M. Wesseling."

This is a curious mode of simultaneous intoxication and purification, but Larcher gives the following citation to show that the Indians of Hudson's Bay have to this day a similar custom:—"When they wish to procure a prespiration they take a large round stone, upon which they make a fire, and keep it up till the stone becomes quite red; they then erect around it a small hut, which they carefully close up; they enter naked with a vessel of water, with which they sprinkle the stone. The water being converted to a moist warm vapour, which fills the tent, causes a rapid transpiration." The Siberians, it is said, get themselves intoxicated by the vapour of the hemp seed thrown upon red-hot stones. The Massagetæ are described by Herodotus to have done so with a kind of fruit. Hemp is also noticed by Galen and Hippocrates.

Speaking of the huge triremes which King Hiero of Syracuse caused to be built in or about the middle of the third century, B.C., under the superintendence of Archimedes, Athenæus says that "he provided cordage from Spain, and hemp and pitch from the River Rhone"; their "sail-cloth was generally woven from hemp." † Dioscorides is cited by various authors for the statement that hemp was one of the many materials which in process of time were substituted for twisted thongs in the manufacture of ropes and cables.

Notices by Roman literati.

12. Pliny, who lived in the beginning of the first century, represents ‡ hemp as a ferulaceous plant growing in the Roman gardens and "remarkably useful for making ropes." He describes the mode of its cultivation and the times for sowing, cutting, and drying, and says there were three varieties of the fibre, those nearest to the pith being the least valued, while those in the middle, and hence called *mesa*, were most esteemed.

The hemp of Alabanda was the best, particularly for hunting nets, and that of Mylasa was of second rank; in respect of size, he says that the hemp of Rosea was equal to a tree in height. This is something like the gigantic hemp of China described by travellers. Varro and Columella make mention of it, and sails made of hemp are alluded to by Tacitus and Juvenal.

Hemp in Egypt.

13. In Egypt the hemp has been known and used from the remotest antiquity, both for its fibre and for its narcotic effects. In the account of the Fakirs' herb given by Tukyuddin Mukrizi, quoted by de Sacy, we have a very interesting and vivid description of the use of the drug in mediæval times ("Chrestomathie Arabe," II., pp. 120 ff.). Two varieties of the herb are mentioned, "the cultivated" (*de jardin*) and "the wild" (*sauvage*); they are both equally denounced as "ordures révoltantes." Mukrizi observes, "J'ai reconnu que l'usage de cette drogue produit des inclinations basses, et avilit l'âme. Nous avons toujours observé ceux qui en avoient contracté l'habitude, et nous avons remarqué constamment que toutes leurs inclinations naturelles se dégradoient, et que leurs facultés alloient en diminuant de plus en plus; en sorte qu'à la fin il ne leur restoit plus, pour ainsi dire, aucun des attributs de l'humanité." Lane, speaking of the modern Egyptians, says, "It is amusing to observe the ridiculous conduct and to listen to the converse of the persons who frequent these shops," called *mahsheshehs*, for the sale of intoxicants.

Nowhere are so many forms of hemp used for intoxication as in Egypt. There its leaves and capsules, under the name of *hashish*, are smoked with the pipe called *gozeh*. The habit commenced with the lower orders of people and pilgrims, and is now common with the people of the metropolis and other towns. Conserves of numerous sorts, with specific virtues attributed to them, are

* Herod. Melp., 75.
† St. John's "Manners and Customs of Ancient Greece," vol. iii.; pp. 306 and 315.
‡ Nat. Hist., Bk. XIX., ch. 56.

are there prepared with the leaves, flowers, or capsules of the plant. One sort is the *májúm*, well known in India; the second is the *barsh*, also well known amongst the well-to-do Mahomedans here as an aphrodisiac; a third sort is said to provoke singing or laughing; a fourth being soporific, and so on.

Arabic and Persian notices.

14. The Arabians, it is supposed, received the hemp plant from Persia or India in ancient times. They knew the use of its fibre, as they name their small cord bow-string and tent rope, *kinâb* (قناب), and the long veil of their females is called *kinnâb*. But they prized it also for its narcotic properties; in fact, they now esteem it only on this latter account.

In the "Ain-i-Akbari" there occurs the following description of the plant:—"Hemp bears yellow flowers during the rains. Hemp grows in clusters like a nosegay. The leaves of the plant resemble those of the chenor tree, and of the bark is made rope." (Vol. I., p. 89.) In another place it is stated "that large ropes are made of hemp." (Vol. I., p. 79.)

Modern Sanskrit notices.

15. In India the *ganja* for smoking and the *siddhi* for a drink are favourite offerings for Siva. In the celebrated shrine of Tárakesvara they are cast over the phallus by devotees from all parts of India, but I am not sure whether any trace of their being sacred to the Himalayan god Mahadeva can be found in the Sástras. Certain plants are described by Plutarch as sacred to Osiris, in Egypt, where Phallus worship was, like that of the Siva in India, very prevalent; and among these plants mention is made of one with trifurcated leaves. It might have been the hemp, the top leaves of which are formed of three leaflets, and which plant is very common in that country.

The grotesque behaviour of the *Genjels* of India is exactly the same as that of the *hasháshins* of Egypt, and the author of the "Dhurta Samágama" describes such conduct on the part of a quaffer of the siddhi.* Rájaballabha, a somewhat modern writer, describes, amongst the other virtues of hemp, its power of curing leprosy and increasing strength and memory. In pouring eulogy on its qualities, he also says, "it was given out on the churning of the ocean for the benefit of man." The "Hárávalí" also says of it that on using it a kingdom even is slighted. The word *siddhi* also, in the sense of a hemp liquor, is first met with in this work.

It is said that Indra supplemented his Soma beer by large potations of siddhi, whence its name *indrásana*, "the food of Indra." The "Tantras" abound in references to the drug as a potent means of disengaging the mind from its mundane associations, leading it up to the divinity; and hermits and fakirs appeal to these authorities to justify their inordinate attachment to the drug. The "Tantras," however, do not confine their recommendation of the drug on the score of its aptitude to promote intellectual abstraction; they supply a large number of recipes for the preparation of conserves and electuaries, which are strongly commended for their aphrodisiacal virtues.

Varieties of hemp,

16. The hemp belongs to the natural order of *Urticaceæ*, which includes several families of plants, such as the Urtica, Bœhmeria, Morus, &c., noted for their fibres and other economic uses. The hemp is a representative of the family called *Cannabineæ* by Blume. Its generic name is *Cannabis* (Sprengal's "Systema Vegetabilium," III., page 903), and its specific name *Sativa* or *Indica*. The *Sativa* and the *Indica* were originally supposed to be two distinct species, but opinion has greatly changed since. According to some botanists, they are identical; others think them to be only varieties of one typical species, and some take them to belong to distinct species. Mr. Clarke, Inspector of Schools, Rajshahye Division, who is an accomplished botanist, and has paid particular attention to the subject, says—"The whole country abounds (especially in waste spots around villages) with the wild hemp, *Cannabis Sativa*, L. Of this the males and females equally abound. The ganja plant is supposed to be a variety of this species by most botanists; but as two such authorities as Griffith and Benjamin Clarke have doubted this, it may fairly be considered an open question whether the ganja plant should be considered a different species. In spite of the distinction

* Act II., p. 95. Lassen's "Anthology."

tinction of the males of ganja, I have not been able to discover anything like a hybrid between the wild hemp and ganja, which favours the supposition that the two are very distinct varieties, if not to be reckoned as species. The ganja plant differs from the wild hemp in its woody, thick, straight stem, its bushy pyramidal habit, the crowded female flowers, the shape of the calyx and bracts of the female flowers, and the presence of the viscid, ganja-bearing grandular hair on the calyx and bracts." Others whom I have consulted on the subject, and who are competent from their knowledge of botany to form an opinion, feel equally disposed to accept the two as different varieties, if not distinct species; I must therefore leave the question undecided for the present. I need only add that the so-called "wild hemp" is not necessarily a wild plant, but in many places it is cultivated for its leaves.

Description of the plant.

17. In the wild state the plant is common all over India, and grows to a height of from five to six feet, a few vigorous specimens rising to nine or ten feet—a bright, handsome, pyramidal plant, with rich green leaves, and greenish-white small flowers.

The cultivated variety is a little more stunted, rarely rising above six feet, and more slender, delicate, and regularly pyramidal, assuming more the character of the cypress, though not quite so fastigiated. The *root* of the plant is white, fusiform or spindle-shaped and covered with fibres. The *stem* is erect, six or eight inches in circumference, simple when crowded, but when growing apart branched even from the bottom, angular, and, like the whole plant, covered with fine, but rough, pubescence; it is hollow within, or wholly filled with a soft pith. The pith is surrounded by a tender, brittle substance, consisting chiefly of cellular texture with some woody fibres, which are called the *reed*, *boon*, and *shove* of the hemp. Over this is the *bark*, which is composed of fibre extending in a parallel direction all along the stalk. The *fibres* consist of delicate fibrils united together by cellular tissue, and all covered by a thin membrane or cuticle. The *leaves* are opposite or alternate, on long weak petioles or leaf-stalks, rough, digitate, that is, with several leaflets radiating from a common point, which are from five to seven in number, narrow lanceolate and sharply serrated; pale green on the inner side, the uppermost being three only, and the lower ones smallest, but all of them tapering at the apex into a long, smooth, entire point.—(Royle, Drury, Elliot, and Voigt). The *stipules* or processes developed at the base of the petioles are subulate or awl-shaped, pale green and inconspicuous. The *male flowers* grow in small bunches on a separate plant; they are lax and pendulous, and are either axillary, that is, inflorescing at the axils of the upper leaves, or drooping in racemose panicles, that is, hanging from the secondary stalks of the peduncle or flower-stalk. The *bracts* are subulate. The *perianth* is five-parted, that is, the calyx having five narrow lanceolate sepals, the segments not quite equal and downy; they have five *stamens*, with short filaments and large, pendulous, and two-celled *anthers* or pollen cases, the cells being united by their backs opening by a longitudinal slit. These male plants are called in British Gurhwal *phúlbhang*; in Bengal, where they have no specific name, they are generally cast away as useless, being very deficient in that resinous secretion which makes the ganja an intoxicant, and for which purpose only hemp is cultivated in this country. The *female flowers* appear erect in packed clusters, growing in spikes with leafy bracts; the *perianth* consisting of a single, spate-like sepal, which is persistent, acuminate, ventricose at the base, embraces the ovary, and is covered with short brownish glands. The *ovary* is sub-globular and one-celled, with one pendulous *ovule*, prolonged into a short *style* bearing two stigmas, which are elongated and glandular. The *nut* or fruit is seated in a cup-like receptacle; it is ovate, greyish-coloured, smooth, covered by the sepal, bivalved, but indehiscent (not splitting when ripe), and inclosing a single oily seed. The *seed* is pendulous. *Testa*, or the seed-skin, membranous and marked at the apex with a coloured hilum (the point of attachment of the seed). The *embryo* is doubled upon itself, and contains no albumen. The *radicle* is elongated and turned towards the hilum, and the apex of the nut is separated from the plano-convex cotyledons by a small quantity of albumen. To distinguish these plants from the *males*, the natives of British Gurhwal call them *goolbhangá*. (Royle, &c.)

The plant is an annual, and dies soon after flowering, or as soon as the seeds have ripened. In the wild state it grows all the year round, but in the cultivated

vated state the seeds are sown in August and September, and flower in December and January.

Botanical characters.

18. The following is a summary of the botanical characters of the plant as given in Lindley's "Flora Indica," page 299:—

"The plant is dicœcious, annual, about three feet high, covered over with a fine pubescence; the stem is erect, branched, bright green, angular; leaves alternate or opposite, on long weak petioles; digitate, scalerous, with linear lanceolate, sharply-serrated leaflets, tapering into a long, smooth, entire point; stipules subulate; cluster of flowers axillary with subulate bracts; males lax and drooping, branched and leafless at base; females erect, simple, and leafy at the base; ♂ calyx, downy, five-parted, imbricated; stamens, five; anthers, large and pendulous; ♀ calyx covered with brown glands; ovary, roundish, with pendulous ovule, and two long filiform glandular stigmas; achenium ovate, one-seeded."

Two sexes of the plant.

19. The most remarkable peculiarity of this species of plant is that it is dicœcious, *i.e.*, some of its members are male and others female. A few never bear any flowers, and these are called *khásiá, i.e.*, hermaphrodites in the ordinary, but not in the botanical, sense of the word. The fact of the separate sexes being on different plants is a peculiarity worthy of special note, as only one of them yields the narcotic called ganja, and there seems to be considerable difference of opinion as to which it is.

The female the ganja-yielding plant.

20. The cultivators themselves and the people around them, also some high officials of Government, think that the narcotic is yielded by the male plant. The cultivators call these the *mardá* (male), and in their opinion all the *mádí* (female) plants, which grow in the fields in large numbers along with the plants of the other sex, should be carefully searched out and removed or destroyed before they flower, as otherwise they are sure to cause all the ganja-yielding plants in its neighbourhood to run into seed, and not to produce the narcotic. The presence of a single plant of the kind, they believe, is enough to ruin an entire field. This is, however, an exaggeration, inasmuch as a few male plants always escape destruction, and seeds are by no means rare in ganja. Some of the seeds may, however, be due to the fact, noticed by Royle, of some plants being moncœcious, that is, bearing both male and female flowers. To definitely settle the question as to which sex yields the ganja, I have had plants of both sexes very carefully examined by Dr. King, of the Imperial Botanical Gardens, and by Mr. Clarke, and I am assured by them that it is the female plant which yields the ganja, and not the male one, and this is fully borne out by others whom I have consulted on the subject. Mr. Clarke, in a letter to the Collector of Rajshahye, says, "I have lately visited numerous fields of ganja cultivation in the neighbourhood of Nowgong, in this district. The ganja plants are now in full flower, and in these cultivated fields I could find no male plants at all: every plant of some thousands must have been female." The very fact which the cultivators adduce in support of their opinion, that the presence of the *mádí* leads to the male plants running into seed, is, I believe, quite conclusive. It is the female which can bear seed in the ordinary course of nature, and not the male; and the destruction of the male plants before flowering removes from the field the source of the pollen, which is absolutely necessary for impregnation. The cultivators, ignorant of the peculiar characters of the male and the female flowers, and yet noticing the fact that the presence of the two kinds of plants in the same field leads to the seeding of one variety, have at random named them male and female, without being able to determine which is which. The marks of difference between the male and female plants before flowering are so slight that to non-professional persons they are not easily perceptible. The cultivators notice one or two rounded bristles, which in the male plant look much thicker than those in the female ones. This difference is not visible in the *khásiá* or hermaphrodite plants, which look healthier and more bushy than the other two. As they do not flower, their presence in the field is perfectly innocuous.

 21. The

The narcotic property of ganja due to a peculiar resin.

21. The narcotic property of the plant is due to a resinous substance which is secreted in minute glands both in the leaf and in the flowers. On the Himalaya this resin exudes freely during the hot weather, and, being collected, is sold under the name of *charas*. On the plains of India this exudation never takes place from the leaves; but the resin remains in their substance, and may be extracted from them by infusion or decoction in spirits of wine or ether. In the flowers, too, it is largely secreted so long as the ovaries remain unimpregnated, and a slight exudation also takes place which gives them a sticky, unctuous feel; but after impregnation this disappears, and the ovaries become dry and comparatively inert: hence the anxiety to remove the male plants and enable the ovaries to secrete and retain the resin to perfection; and these ovaries, as also their surrounding appendages, the calyces and bracts, constitute ganja. The ganja of commerce includes, besides them, stalks, petioles, stipules, and a few leaves; but ganja-smokers carefully reject these as unfit for use. The seeds contain no resin and are inert. The seeds referred to by ancient writers are obviously the unimpregnated ovaries.

Character of the resin.

22. The resin in question has been named *Cannabin*. According to Dr. O'Shaughnessy ("Bengal Dispensatory," page 581), it "is very soluble in alcohol and ether; partially soluble in alkaline; insoluble in acid solutions; when pure, of a blackish-grey colour; hard at 90°; softens at higher temperature and fuses readily; soluble in the fixed and in several volatile oils. Its odour is fragrant and narcotic; taste slightly warm, bitterish, and acrid."

Quantity of resin present in ganja.

23. The quantity of resin present in ganja differs greatly and in different specimens. In 1872 Dr. Macnamara examined 61 samples collected from different parts of India, and the percentage of resinous extract obtained by him varied from 1·5 to 14·9, the Bengal specimens ranging from 3·9 to 5·8, the North-Western Provinces specimens ranging from 1·4 to 6·2, the Madras specimens ranging from 1·5 to 14·9, and Bombay ranging from 5·3 to 10·5. One Madura specimen yielded 14·9 per cent. of the resinous extract, another 11·9, and a third 10·3. A specimen from Kooroovin, in Madras, gave 12 per cent., and one from Pencoonda, in Bellary taluk, 10·1 (Dr. Macnamara's Report, No. 71, dated 11th June 1872.) A sample purchased in the Calcutta market and examined by Ráy Kanai Lall Dey, Bahádur, yielded 10·63 per cent. of extract. But Dr. O'Shaughnessy says that ganja "yields to alcohol 20 per cent. of resinous extract." This disparity is to some extent, I presume, due to the experiments having been limited to the preparation of an alcoholic extract, and the alcohol taking up more or less of other vegetable matter besides the cannabin resin, and the age of the specimen affecting the result of the experiments. It is obvious that in fresh specimens there must be a larger quantity of chlorophylle or green coloring matter than in old specimens, in which it is decayed or decomposed; and as in its sound state the colouring matter is soluble in alcohol, it necessarily produces different results according to the age of the specimens operated upon. In Dr. Kanai Lall Dey's experiments, while ganja yielded yielded 10·63 per cent. of extract, bhang yielded from 7·5 to 8·79 per cent.; but the narcotic effect of the latter was as one to three of the former, showing clearly that the resin, on which alone the narcotic power depends, present in the leaf extract was two-thirds less, and the rest of the extract was made up of chlorophylle and other inert substances. Further and more detailed experiments are necessary before this question can be satifactorily solved. It is indisputable, however, that climate and culture have considerable influence in producing the resin, and its quantity must vary according to circumstances.

Among ganja-smokers opinion varies very considerably as to the narcotic effects of the different varieties of ganja sold in the markets. Those who are in the habit of using flat ganja will not, if they can help it, touch round ganja, while those who are accustomed to the round sort will not relish the flat drug. In Beerbhoom, a round-ganja comsuming district, a wholesale goládár of 25 years' standing said to me, when I was there in January last, that the consumers thought the flat ganja to be full of leaves, which did not exist in the round kind, and that it was stronger in respect to narcotic powers and caused burning

burning of the eyes. At Bhagulpore, where flat ganja alone is imported, I was told that the hemp-smokers considered the round sort to possess greater narcotic powers than the flat kind, and that they would not therefore smoke that sort of drug. In Monghyr, also a flat-ganja importing zillah, I was told that the consumers could not smoke the round sort on account its greater narcotic power. These opinions, I need hardly say, are of no value, formed as they are by men biassed by old habits and prejudices.

Analysis of the produce of hemp.

24. The leaves of common European hemp have been submitted to careful analysis by Tscheepe, by Schlesinger, by Kane, and by Bohlig, and the results show that they comprise chlorophylle, gluten, phosphate of lime, brown extractive matter, sweetish bitter ditto, lignum, soluble albumen, and salts of ammonia, potash, lime, and magnesia, alumina, and silica. The leaves of the Indian hemp have never been thoroughly examined, but they probably contain the same constituents, with the addition of a variable quantity of cannabin. According to Bucholz, the seeds of European hemp contain fixed oil 19·1, resin 1·6, sugar with extractive 1·6, gummy extract 9·0, soluble albumen 24·7, woody fibre 5·0, and husk 38·3. The seeds of Indian ganja have never been examined, but they contain a much larger percentage of fixed oil. By the ordinary modes of extraction in a mill as much as 25 to 30 per cent. of it is easily obtained.

Economic uses of hemp seeds, wood, and fibre.

25. In Bengal the seeds are used for making a bland, fixed oil, which is tolerably well adapted for lamps; it is also employed for adulteration with mustard oil. In Rajshahye the seeds are baked and eaten as an article of food, but not very extensively. In Europe they are used to feed cage-birds. The hemp-seed oil is extensively employed for a variety of purposes: for lamps, soap-making, paints, and varnishes. It has an acrid odour, but mild taste. The wood is used for fuel only, and the bark in Bengal is thrown away. But on the Himalaya, especially in Káshmir, Gurhwal, and Sermur, the natives manufacture from its fibres of various qualities, fishing nets, cordage called *sels* for crossing rivers, coarse stuffs for rice-bags, and bhangela and ganjeli garments for summer wear, and shoes with or without leather soles.

Uses of hemp leaves.

26. The most important products of the hemp in India are its leaves, flowers, and resin; all used as intoxicating drugs. The leaves are known under the different names of *bhang*, *siddhi*, *patti*, and *sabji*, and form a most important article of trade. In some official reports the words are so used as to imply different articles, but they are really synonyms of one and the same substance. They are consumed in a variety of ways, the most common form being an emulsion. The dried leaves are repeatedly washed to remove the green colouring matter, then pounded into a fine paste with a few grains of aniseed (*Anithum sowa*), diluted with water, and drunk as a refreshing draught. The quantity taken at a time varies from half to five tolas of the dried leaves. Dried rose leaves pounded, black-pepper, rose-water, and sugar are added to the draft, according to taste. To the uninitiated a draft of a tolá is enough to produce strong intoxication with a tendency to laughter, great thirst, and constriction of the throat, followed by a peculiar sensation of everything tumbling upside down and protracted sleep. But those who are accustomed to the drink feel nothing beyond a pleasant sensation of intoxication, with a more or less obliviousness of all mundane cares. The effect, however, varies greatly according to constitution and temperament. In Bengal this drink was at one time very popular everywhere, the rich and the poor, men and women, alike indulging in it; but of late it has fallen into desuetude. But on the last day of the Durgá Pujá it is religiously offered to every guest and member of the family, and those who do not like to take it put a drop of it on their tongue, by way of acceptance. In the North-Western Provinces the use of the draught is common everywhere, and, like tobacco, is nowhere held to be reprehensible, or in any way discreditable. The habitual use of this drink produces no perceptible ill effects on the human system; it is recommended to persons suffering from long-protracted chronic diarrhœa, who find it very efficacious in checking their complaints.

Boiled with ghee over water, the leaves part with a portion of their peculiar resin to the ghee, which floats on the water in the form of a green jelly. A

portion of this jelly mixed with dried milk and syrup over a fire produces a paste which readily hardens when cooled, and it is then cut into small tablets; this is called *májun* or *májum*, which is a favourite form of taking the drug. It is used only by the dissolute for exciting their animal propensities. The draught aforesaid is believed to be not so effectual in this respect as the comfit. The dried leaves in powder are also mixed with a variety of stimulating spices and made into different kinds of conserves, which are reckoned to be highly aphrodisiacal. The Mahomedans of Northern India make a conserve called *barsh*, which is greatly prized as an excitant. In an edict of Napoleon Bonaparte, issued when he was in Egypt, it appears that in that country a liquor was distilled from the leaves. It says, "La distillation de la liqueur de *hachich* est prohibée dans toute l'Egypte; les portes des cafés, des maisons publiques ou particulières dans lesquelles on en distribueroit seront murées, les propriétaires arrêtés et détenus pendant trois mois dans une maison de force." But I have not been able to obtain any detailed account of this liquor. I have seen mention made of the use of the leaves for smoking in several books, but I believe the statement in every case to be incorrect, resulting in a confused idea of the distinction between the *siddhi*, the charas, and the ganja.

Use of Charas.

27. *Charas*, from the Persian چرس, is the name of the resin which naturally exudes from the flowers and leaves of the Indian hemp plant. It occurs in brownish-black grains or masses, and has a strong, but not very disagreeable, resinous smell. It is collected on the Himalaya, in Nepal and Tibet, and also in Cabul, Bokhara, and Hirat. The Hirati *charas* is said to be the most potent; it comes in the form of a thick, treacle-like, deep-brown fluid. It is only used for smoking, never for any medicinal purposes. The mode of smoking the drug is to put a few drops (10 to 15) of the fluid, or to mix about 10 grains of the resin in powder with prepared tobacco —a paste of tobacco and molasses— and to smoke the mixture through an ordinary hubble-bubble. The smaller the pipe of the smoking apparatus the better, as it prevents the fume from cooling and depositing its narcotic essence in the pipe. The rule is to have three whiffs at a time, and the effect thereof is instantaneous. Before the hubble-bubble can be replaced on its stand, the head of the smoker is quite giddy, and at times, if he be a new smoker, he is ready to fall down drunk; but the effect does not last long. While the intoxication from the *siddhi* lasts for 12 to 14 hours, that from the *charas* vanishes in an hour or two. Habitual ganja smokers take *charas* frequently to whip up the effect of ganja. In a person unaccustomed to narcotics, the first use may produce injurious effects; but after the habit is once formed, it does no permanent harm to the constitution. Its want never causes any longing or uneasiness.

Use of Ganja.

28. As already described, the flowers of the female plant produce ganja. Like the last, it is used only for intoxication, and that in only one form, *i.e.*, smoking. From 25 to 30 grains of the flowers are carefully separated from the leaves, stalks, and seeds, well-mixed with dry tobacco leaves on the palm of the left hand, and then placed in a small bowl over a thin layer of prepared tobacco, and smoked through a small hookah. Its effect, like that of *charas*, is instantaneous, and three whiffs are enough to keep even a habitual smoker dizzy for some time. The intoxication lasts for several hours. Though the quantity of the resin contained in the ganja is much smaller than the quantity of the *charas* (which is pure resin) consumed at a time, the effect in the former case is many fold greater; and all the evil effects of hemp-smoking, which caused such widespread mischief, are due solely to ganja. No narcotic used by man is nearly so deleterious and permanently injurious to the constitution as this baneful drug, which has been most aptly described as an "*ordure révoltante*."

Locale of cultivation.

29. It has been already stated that the hemp plant in the wild state grows all over India, and that there is scarcely a province in which it is not to be met with. In the provinces under the Lieutenant-Governorship of Bengal, Shahabad, Chumparun, Monghyr, and Bhagulpore, particularly the two last, are noted for the luxurious and extensive growth of the wild plant. People there collect its leaves in large quantities, cure them, and supply all the Bengal markets with *siddhi*. The plants are cut and used as fuel, but no attempt is made to utilize the bark. Owing to the

the fact of the male plants not being destroyed, the flowers run into seed, and no ganja can be prepared from them. In some parts of Dacca, Patna, and in the Tributary Mehals of Chota Nagpore, small fields have been met with where the hemp is regularly cultivated, but the object in such cases is its leaves; no ganja is produced in any of those places.

Gurjats of Orissa.

30. In the Gurjats of Orissa ganja is prepared in small quantities, and from this circumstance I am disposed to believe that the people there know the peculiar habits of the two sexes of the plant, and assist nature by removing the male plants from their fields, though I have no positive information before me to support my opinion. If the ganja-bearing plant be a distinct variety or species, the plant common in the Gurjats belongs to it.

North Western Provinces, Central Provinces, Bombay, and Madras.

31. In the North-Western Provinces, Mozufferpore, Bareilly, Jaloun, Budaon, Moradabad, Gurhwal, Kumaon, Goruckpore, and the Terai are the principal places where ganja is grown for commerce. In the Central Provinces all the three drugs, siddhi, charas, and ganja, are, I am told, largely produced. In the Bombay Presidency, Sholapore, Ahmednuggur, and Khandeish are the only place whose names have come to my knowledge in connection with the drug. But in Madras it is extensively cultivated, and Vizagapatam, Salem, Tanjore, Madura, Nellore, Arcot, Coimbatore, Kurnaul, Bellary, and several other places are noted for it.

Bengal.

32. In Bengal formerly the district of Jessore was celebrated for its ganja, and large quantities of the drug were prepared there for the consumption of the people of the province. The quality of the drug as prepared there was also held in high estimation by ganja-smokers, and several popular songs are still current in which it is highly extolled. The mode of curing ganja there was peculiar. The floral spikes were rolled on a mat so as to make the florets adhere to each other and assume a long tapering cylindrical form; and to this day that form, though made elsewhere, bears the popular name of "Jessori ganja;" in official records it is called "round ganja." The three pergunnahs there most noted for it are Ramchunderpore, Taragonia, and Syudpur.

Mr. Westland, in his report on the district of Jessore, gives the following information with regard to the ganja cultivation in that zillah as it existed in the year 1809:—

"The exciseable drugs consumed in Jessore were maddat, ganja, sabji, bhang, majum, bakar, charas. Ganja was largely cultivated within the district, principally about Keshubpore, in pergunnahs Ramchunderpore and Taragonia, but also to a small extent in the north-western corner. The duty was collected upon it at the time of its purchase or export from the producing districts, of which Jessore was then a principal one. The Collector, writing in 1809, estimates that 50,000 or 60,000 maunds are prepared within the district, and are brought up from January to April by byaparis (or traders) at Keshubpore, Fakirhaut, Noapara, and Kooshtea, the price being then about Rs. 4 or Rs. 5 per maund (B. 21-11-92; C. 3-5-00, 17-4-06, 25-4-09.)

"There was some difficulty in collecting the tax in the manner just mentioned, for the byaparis might come, make their whole transaction in a single night, and clandestinely export large quantities of ganja without paying tax. The collector proposed to remedy this by making ganja a monopoly, but this was not consented to. He also wished to make the byaparis pay a license tax, but the Board was opposed to this also (C. 25-4-09; 1-6-09)."

The records of the Board confirm the above information, and also show that the cultivation of the narcotic, though now totally suppressed, was flourishing in 1843, and was continued down to 1875, when it was stopped under orders of the Board. When and how the cultivation of the drug commenced to decline I have not been able to determine. It is said that the oppression of the zemindars and the interference of Government officers led to the cultivation being given up.

Rajshahye.

33. From Jessore it was carried to the north of the Ganges. According to tradition, as communicated to me by some of the oldest inhabitants of Nowgong, it was about the year 1127 B.S. (=1722 A.D.) that the narcotic was for the first time cultivated in the village of Bálubhorá, in the district of Bogra, and in that of Murádpur, in Rajshahye, which adjoins it, the seeds having been imported from Kushtea, where there

were shops for the sale of the drug. The cultivation, proving remunerative, was gradually extended to several other villages. How far this is correct I cannot verify. There is one fact, however, which is peculiarly suggestive in this respect, and that is, that to this day some of the Calcutta wholesale dealers bring skilled labourers from Jessore to Nowgong for the purpose of preparing the round ganja, and I have ascertained that some six years ago five to six hundred labourers used to be imported to the Ganja Mahal from that district for the preparation of the round drug. It is further certain that ganja has been largely grown in Rajshahye as an article of export for only three generations, *i.e.* from the time of the grandfathers of the present class of cultivators.

On the whole, therefore, I think it would be safe to infer that Bogra and Rajshahye succeeded Jessore as ganja-cultivating districts.

Ganja Mahal.

34. Although Bogra, Dinagepore, and Rajshahye are the only districts in Bengal where ganja is now grown, it does not occur in all parts of those districts. There is only one tract of land where it is cultivated, and parts of it lie in the three districts. The head-quarters of this tract is Nowgong, which is situated on the northern border of Rajshahye, about 38 miles north-east of Rampore Beauleah, as the crow flies, and almost in the centre of the tract. The whole of this tract is called *Ganja Mahal*, and it lies partly in the jurisdiction of the police station Bandaikhárá, in the district of Rajshahye, prrtly in the jurisdiction of thanas Bádalgátchi and Adamdighi, in zillah Bogra, and partly in a few villages of thana Patnitollá, in Dinagepore. The whole of this tract is included within a radius of about 16 miles, and includes an area of a little over 60,000 acres.

Extent of cultivation; number of villages and of men.

35. From the old records of the Ganja Supervisor's office I find that there has been considerable variation in the number of villages in which the hemp has been grown from time to time. In 1854 ganja was raised in 235 villages; 10 years afterwards the number fell to 221, and in 1874 it rose to 252, while in 1876 it fell to 190. In the same way the number of cultivators was reduced from 2,417 in 1854 to 2,118 in 1864, which number was slightly increased in 1874 to 2,161. In 1875 only 1,269 men took to cultivating the narcotic, and last year this number increased to 1,908.

Area.

36. With regard to the land under cultivation with ganja, I find that in 1856, the earliest year on record, the area occupied by it was 2,608 bigás and 10 cottás. In 1866 it was reduced to 1,399 bigás and 13 cottás. These figures have been taken from the records of the Supervisor's office, but they are, I have every reason to believe, far from being approximately correct; for in 1876, or the last year, while those records showed that only 2,113 bigás and 2 cottás of land had been grown with hemp, I found on actual measurement by three ameens that ganja had been cultivated on no less than 3,111 bigás and 9 cottás of land, or 998 bigás and 7 cottás in excess of the quantity reported by the Supervisor. That in other years there has been similar disparity between fact and figures it is but natural to infer. The fact is that the lands under hemp had never been regularly measured either by the cultivators or by the excise officers, and consequently the information given year after year about the quantity of ganja grown and that destroyed or left unsold in the cultivators' houses were merely rough guesses.

Annexed is a statement (Appendix A.) showing, according to the accounts kept in the Supervisor's office, the quantity of land annually grown with hemp from 1854 to 1876, the number of men engaged in the cultivation from year to year, and the quantity of drug yielded by each year's crop.

Surveyors' office routine.

37. The Supervisor's office was for the first time established at Nowgong in the year 1854, and certain rules were framed for controlling the gathering of hemp crop, its storage, and its exportation. I believe at about that time also the wholesale dealers were ordered to have their warehouses for the storage of ganja registered.

Before the year 1854 the usual practice was for the purchasers of ganja, armed

armed with passes granted by the excise officers of their respective districts, to go to the cultivators of the drug and purchase from them whatever they wanted, without any interference of the excise officers. At the time of leaving the Ganja Mahal they reported to the abkaree darogah the nature of their purchases and got their passes endorsed by him.

No weighing and packing in the presence of Government officers were deemed necessary in those days.

38. I proceed now to describe the mode in which the hemp is cultivated.

Mode of cultivation. First ploughing.

The selection of lands for the growth of the hemp crop is generally made in the months of Mágh and Fálgún (latter half of January to middle of March), but the dressing of the lands does not, as a rule, commence before the month of Chait (March-April). A few persons who can afford to do so begin the dressing earlier, and in the latter part of February last I saw a commencement made in some plots in the neighbourhood of Nowgong. The sites selected are open fields on which the shadow of no large tree can fall, for shade of all kinds is held to be injurious. The first act of preparation is to plough up the land from four to ten times, according to the state of the field and the means of the person owning it. The great object of this ploughing is to free the soil of all herbage and stubble. The ploughing takes place at intervals of three or four days. In the beginning of Baisákh (April-May), or even earlier, fresh earth taken out from the surrounding ditches of the field, and, if sufficient earth cannot be had there, from some low land close by, is put on the field. This proceeding is called *bhorákátá*, and is generally done by a batch of coolies, who annually make their appearance in the ganja tract from the Purneah, Dinagepore, and other neighbouring districts. The earth is taken up with *kodalis*, and carried in *bángis* formed of two round flat baskets suspended from a piece of split bamboo. The quantity of earth deemed necessary is a basketful over an area of about three square feet, or, as the cultivators express it, 1½ feet apart. But when the soil is good a greater width is adopted. In digging for the earth care is taken to remove only the surface mould formed of decayed vegetables and washed earth and silt, the layer below the surface being considered to be useless for the purpose of manure. It takes from eight to 10 men to dress a bigá of land in one day. A few, who cannot afford to employ hired labour, do the work themselves.

39. The next process required is what is locally called *chálikátá*. This is invariably done by the cultivators themselves or by their permanent servants. The process consists in taking up with *kodalis* from the sides of the field under cultivation patches of sod, along with the grass and other weeds which grow in abundance on it, and to throw them on the field. The hollows caused by the digging are filled up with earth taken out of the side ditches, and the sides are raised to about 9 inches above the level of their field. This last proceeding is called the *pagárbándhá*. The labour of twelve men for a day is required for every bigá of land for these two operations. The objects of these proceedings are twofold, viz. (1) to get the grass and other weeds, which cannot necessarily be ploughed on the borders of the fields, taken up, and to act as manure by being left to rot in the centre of the field; and (2) to have fresh earth put on the sides, where also the cultivators grow hemp.

Throwing sod on the field, and surrounding it with a ridge.

40. The next operation is to manure the field with cow-dung, but this is not done everywhere. After about a week, during which time the fresh earth becomes dry and friable, the land is thoroughly ploughed up, two ploughs being sufficient for ploughing one bigá of land in course of a day. The ploughing is repeated after an interval of three to eight days. The belief is that the oftener the land is ploughed, the better is the crop. In the four months which follow, when the rains set in, the land is alternately ploughed, and a bamboo ladder (*moi*) drawn over it from four to ten times, according to the nature of the soil. The latter is a substitute for the harrow, the object being in either case the same, namely, the breaking up of clods and levelling the field. A shallow channel is also excavated, locally called *bhomor*, for the drainage of the rain-water. Towards the end of Bhádra, or the first half of

Second course of ploughing and manuring.

September, cow-dung and refuse and house-sweepings, which are carefully preserved throughout the year, are carried to the field in báugis and thrown in little heaps of one basket-load 3 to 4½ feet apart.

Third course of ploughing and ridge-making.

41. In the last week of Bhádra (middle of September) or early in Asvin, that is, about a week or ten days after the manuring, when people see signs of having fair weather for a few days, a third course of ploughing has to be gone through, numbering from six to eight times, every two ploughings being followed by one harrowing with the ladder. Ridges are then made over the field at a regulated distance from each other, and well smoothed and beaten down with the hand.

Transplantation.

42. When the fields are fully prepared by this course of dressing, the seedlings are transplanted. All the operations of the third course, ploughing, harrowing, ridge-making, and of transplantation, have to be completed in course of one and the same day, as otherwise the earth so pulverised would scarcely retain any moisture till the next day, and be unfit to receive the young plants. The ground from the commencement is well protected from the accumulation of rain-water and the growth of grass or other weeds. The number of ploughings is regulated by the nature of the soil, *khear* or clayey lands, in which hemp is occasionally grown, requiring more frequent ploughing than fields of *poli* soil or light, sandy loam, which form the majority of ganja beds.

The seedlings at the time of transplantation are from four to five weeks old, and from 6 to 12 inches high. The smaller ones are selected for higher and drier fields, in which they are enabled to throw out their roots much quicker and easier, and grow up much faster than in low fields, the soil of which is somewhat heavy, owing to the existence in it of a greater amount of moisture which retards the growth of very tender plants. Seedlings of a smaller size than 6 inches are allowed to remain in the nursery till they get older and stronger.

The seedlings are planted out 6 to 8 inches apart from each other upon the ridges. The transplantation takes place the same day on which the seedlings are removed from the nursery. They are pulled out by the hand, and in the cool of the morning or evening of a sunny day planted out. Those seedlings which have grown up as high as 15 inches or more in the seed-beds are considered unfit for being planted out, as on being transplanted, their tops, which are necessarily heavy, droop, and they soon after wither away and die. If the transplantation is delayed beyond the first ten days of Asvin (about the third week of September), the crop gets stunted in its growth, and the yield of ganja is inadequate. If rain falls within three or four days after the transplantation, it proves injurious to the young plants, the roots of which, not having taken any hold on the soil, rot and die away. In that case a second transplantation has to be made.

The first ten days after transplantation the cultivators look upon as the most critical period, as the risk of the plants not taking root and dying during that time is great. After it the danger from sudden changes of the weather is slight. Plants dying during the period are replaced by others removed from the nursery.

Nursery.

43. The nursery or the seed-bed consists of a plot of high, light, sandy, loam, which the cultivator or a number of cultivators commence ploughing in the beginning of Jaisthya (the middle of May), or as soon as one or two showers of rain have fallen. It is ploughed three or four times each month till the end of Srávan (early part of August), or in the beginning of Bhádra (latter part of August). If the soil be light and the ground free from clods, no harrowing with the ladder is needed before the seeds are sown; but should there be clods, the *moi* has to be used. The ground should be thoroughly ploughed up and the earth pulverised very fine. The seeds are sown broadcast by the hand on a sunny day. The sowing is immediately preceded by a ploughing, and followed by a harrowing, the ladder being passed over the ground two or three times to get the seeds covered up with earth. Furrows are made

made and kept open in the nursery for the drainage of water in case of rain falling.

About four to five seers of seed are deemed necessary for a bigá of land, and a cottá of ground is taken up for a nursery if this quantity has to be sown. The seeds commence germinating on the fourth day from the day of sowing, and on the sixth or seventh day the sprouts begin to assume a green colour. During all this time a watch is kept in the nursery in order to save the seeds from being picked up and eaten by birds. A plot of land near the homestead of the cultivation is generally made available for a nursery, and the people, in order to make themselves sure of its dryness, always make it a point of using those lands only in which a tuberous-rooted, grass-like vegetable, called *muthá* (*Cyprus rotundus*, *L.*) grows. The growth of muthá is, in their opinion, a sure sign of the land being quite dry.

Seeds are not sown on either a rainy or even a cloudy day when rain is apprehended, as the wet ground rots them. Even if it rains three or four days after the seeds have been sown, most of the seeds are destroyed, as the earth gets hardened into a cake after the rain, and the germs cannot force up their way through it. In such cases a second sowing has to be resorted to, but not on the same nursery. Nurseries are never manured; they are always made in an open place, as seedlings would not grow if they were kept under shade of any kind. Nor is grass weeded out at any time after the sowing of the seeds. They are also never irrigated. The cultivators are of opinion that the growth of grass in the seed-beds is beneficial to the young plants, inasmuch as they protect the latter from the action of the wind. In some places the same plot of ground is used as a nursery for four or five years successively, after which some other plot is selected; in others the same land is used for only two years. If land fit for seed-beds be scarce in the village, a number of persons club together and grow their young plants in one bed; but in such a case the bed is partitioned off by furrows dug with a plough, and each person takes possession of a separate portion. The seedling is called *púl* and the seed-bed *púlairthál*.

Arrangement of ridges.

44. The ridges, commonly salled *shulis*, upon which the seedlings are planted out, are usually a foot high and a foot apart from each other at base. They are 18 inches broad at the base. The field is surrounded by a ridge all round; this last stands nine inches apart from the ridges intended for plantation. Those who intend to sell the standing crop to the wholesale goládárs for the preparation of the round ganja make the ridges somewhat closer to each other than those who prepare their own drug. The object of the former is to present a closely-planted field to the eyes of the purchasers. In the latter case the aim is to have sufficient space between the ridges, so that the fields may be easily ploughed and harrowed with the ladder. Such being the case, the number of ridges on any given area must vary considerably. The form of the field also must cause marked differences in their number. Usually the direction of the ridges is breadthwise. In a field at the village of Bhabánigánti, measuring one bigá and five cottás, I counted 55 ridges, of which 20 were 130 feet; 34, 41 feet; and one 20 feet long. In another village named Fattehpur I surveyed a field belonging to one Shám Sardár, which measured 246 feet by 87 feet, containing an area of one bigá and 11 cottás, and it contained 77 ridges, of which 75 were 85 feet and only two 60 feet long. In the village of Pár Nowgong a plot measuring on an average 257 feet in length and 114 feet in breadth, containing an area of two bigás one cottá and 11 chhatáks, contained 77 ridges of an average length of 112 feet. At an average, the number of ridges per bigá may be reckoned at 49.

Dressing and manuring of ridges after transplantation.

45. After a lapse of about three to four weeks, *i.e.* about the latter part of Asvin or the beginning of Kártik (middle and latter part of October), the fields are weeded with an instrument called *dowl*, and some 10 to 15 days after, *i.e.* about the third week of Kártik (beginning of November), the ridges are cut down with a blunt hoe, leaving untouched lumps of earth about four inches square and six inches deep round the base of each plant. This has to be done very carefully, so that the roots of the plants be not injured nor their hold on the earth weakened, and the plants rendered liable to be easily blown down. The earth produced by the cutting down of the ridges is gently loosened with a

nirán and kept in the trenches. Manure, consisting in some places of oil-cake only, and in others both of oil-cake and cow-dung well pulverized, is then thrown round the roots of the plants, the hand in so doing being kept under the plants and near the ground, so that none of the manure may be wasted by being blown away or retained by the leaves and branches of the plants. The earth of the broken ridges is now thrown over the manure, and the ridges are rebuilt with such additional fresh earth as may be necessary. All clods in the fresh earth are broken down with pieces of flat split bamboo, which are also used in beating down and making firm the surface of the ridges. From fear of the earth remaining in a loose state and losing all its moisture, to the detriment of the plants, only as many ridges as can be opened out, manured, and remade in one day are taken in hand at a time.

Trimming.

46. A couple of weeks after, *i.e.* early in Agraháyan, the plants have to be trimmed, and this trimming is limited to the breaking down of two or three of the lowest branches. This in some places is called *gánjá-jhorá* and in others *bishpátá-bhángá*. The object of this operation is to promote the upward growth of the plants and direct all the sap to the top, on which alone the ganja grows.

Ploughing between the rows of plants and redressing of ridges.

47. The trenches, or the spaces between the ridges, are then ploughed twice and harrowed once; but if the soil be a little clayey and clods are seen in it, each ploughing is succeeded by a harrowing. The ladder used for this purpose is made of the proper size to suit the width of the trenches. The ploughs, too, are small, with short yokes, and the bullocks used are of small bulk. In the course of the ploughing very little of the earth in the ridges is touched, except about three inches on each side of the ridge at the bottom, which is purposely ploughed away. The dry earth on the surface of the ridge to a depth of about two or three inches is then scraped off with a *niráni*, cow-dung well pulverized strewn over the ridges, followed by equally well pulverized oil-cake; the whole is covered over with earth derived by the scraping and the ridges are again firmly beaten down with pieces of flat split bamboo. The plough and the ladder are dragged by bullocks with muzzles on, and the animals specially trained to the work, for the bullocks have to walk between the rows of plants, and, unless trained for the purpose, they are apt to injure the plants. The height and breadth of the ridges are increased by three inches, as each process of opening and closing them is gone through.

Destruction of male plants.

48. About the 10th of Agraháyan or earlier, according to the forwardness of the crop, the ganja doctor, locally called the *poddár* or *parakdár*, is employed for the purpose of inspecting and examining the plants, and from that time to the middle of Paus he repeats his inspection three or four times. This inspection is invariably made in the morning, when there is no glare, so that the poddár may well see the filaments or stipules, by the make of which he can distinguish the male from the female plants. The plants at the time of the first inspection are about two and a half to three feet high. The second examination takes place by the middle of Agraháyan or a little later, the third about a fortnight after, and the fourth when necessary, which is not always the case, takes place by the middle of Paus. The poddár stoops down to see the plants, and whenever he comes across what he calls a *mádi* plant, he breaks the stalk in the middle, and leaves it to the owner of the field to uproot and throw away. A large number of plants are thus removed, it being the impression of the ganja-growers and the poddárs themselves that no one can distinguish the males from the females until the plants have tolerably well advanced and attained a height of from two and a half to three feet, when the distinguishing marks commence to show themselves, and the higher the plants grow the marks become more conspicuous. The poddár is an indispensable person in the ganja business, and the result of the cultivation depends mainly on his care and diligence in weeding out the male plants; for, as already observed, the presence of a few *mádi* plants, or, correctly speaking, of male plants, in the field suffices to injure the entire crop, inasmuch as all the plants run into seed, and the ganja yielded by them is very inferior and scarcely saleable. I saw the existence of a great many seeds in some ganja and a few only in others, and on questioning the cultivator as to the cause of this difference was told that he had been ailing, and had not therefore been able

to

to go about the fields and rid them of every female plant after the poddár had done his work. I also know it for a fact that a poddár, however clever he might be, generally leaves behind him a few of these plants in the field, which the cultivator, who goes round his field every morning in search of the obnoxious plants, which he knows by the flowers which they now commence bearing, destroys. As a matter of fact, the destruction of the male plant is never thorough, and the presence of a few accounts for the seeds which are met with in ganja, and a good deal of which is threshed out during the manufacture of the drug. The poddár is remunerated according to the size of the field, and is fed free of charge during the days he is engaged in his examination. He generally gets Rs. 2-8 to Rs. 3-8 for examining the crop on each bigá of land, and is always paid before he completes the last picking. In former years the ganja doctors were all men from Jessore, but they have now been replaced by men of the place. In some families of ganja cultivators one of the members has learnt the poddár's business, and in such cases the fee is saved.

Second trimming and transplantation.

49. The poddár's picking or thinning out, which the cultivators term *bách*, being over, the field owner applies himself to a second trimming, ridding the hemp plants of one or two of the lowest twigs, which present an unhealthy yellowish colour. This proceeding in some few instances is repeated a few days later on. Towards the end of Agraháyan, *i.e*, about the second week in December, or a week after, the cultivators remove some of the ganja plants from those portions of the field where they are the thickest to those parts where the poddár's operations have left a vacuum. This transplantation takes place generally in the evening, and water is poured on the roots of the newly-transplanted plants.

Irrigation.

50. The fields, the soil of most of which, as already observed, is light sandy loam, commence assuming a dry look by the beginning of Agraháyan (latter part of November), and the cultivators commence watering them. They are irrigated in most places twice, and in some places thrice; but very high and dry lands are irrigated even for the fourth time. Some lands, either from their situation being somewhat low, or from scarcity of water, are irrigated only once; but the yields in such fields is generally small. Where two irrigations are needed, one is given in November and the other some time in Paus (December-January). It is either after the first or the second picking by the ganja doctor that the land is irrigated for the first time. Where three irrigations are needed, the land is soaked once in Agraháyan and twice in Paus. The fourth irrigation is made in Mágh, if a north-west wind blows and dries up the land.

In the case of fields, the soil of which is very clayey (*khear*) many more irrigations are required, and I have known of instances in which khear fields were in the season just passing away, irrigated as many as seven times. It is necessary to water the fields composed of this soil every 10 or 12 days, otherwise they dry up, get cakey, and crack. The growth of the ganja is very seriously impeded thereby.

Mode of Irrigation.

51. For raising water for irrigation, two methods are followed. If the water has to be raised from a well or a very low place, a large lever is mounted on cross posts, and provided with a basket hanging by a long bamboo at one end and a large lump of earth at the other. A person standing on a platform pulls down the upright bamboo so as to dip the basket into the water, and then allows the weight at the other end of the lever to raise the water to the required height, when the basket is emptied into a vat kept ready for the purpose, wherefrom it flows to the field through narrow channels. In raising water from tanks, beels, and other receptacles of no great depth, or where the water is available close to the level of the fields, baling with bamboo baskets, each held by two men, is the most convenient process. When water has to be brought from a beel or tank lying at some distance, a drain is cut from that beel or tank to the ditch by the side of the field, where a hole is dug to receive the water. From this receptacle the water is raised by a second baling. Just sufficient water is thrown on the fields to well soak the land, but not to drown it. This work is generally done by the members of the family, assisted by the servants permanently employed; but where the cultivator has not got a sufficient number of male members in the

family nor any servant of his own, he is compelled to have recourse to hired labour.

Last Dressing of Ridges.

52. A few days after the last transplantation the ridges have once again to be scraped, manured, and reformed in the way already described in paragraph 40. At this time, and indeed within a few weeks of the reaping of the harvest, the owner of the crop looks after his plants daily with a view to remove any stray so-called mádi plants that may have been accidentally left in the field.

Flowering.

53. At about the end of Paus, *i.e.*, in the beginning of January, the more advanced female plants commence to flower, and in this state the crop is sometimes sold. But the flowering is not general until two weeks afterwards, and it takes nearly a month from the time before the floral spikes attain their maturity and the ganja is fully formed. The state of maturity is indicated by a brownish appearance and falling of all the larger leaves. The flower of the so-called male, but really female, hemp bears the name of *kua* or *bhua*. Probably the latter is the correct name, as it means empty or seedless, and is used to indicate all fruits besides ganja which is wanting in seed or kernel. The flower of the plants destroyed by the ganja doctor is called *phul* or flower. The flowering of the male plant commences in the month of Agraháyan (November).

Sale of Crop by Fields.

54. A few wholesale dealers, in order to be early in the market, offer a tempting price to the cultivators and induce them to manufacture the drug, both round and flat, before the plants have become quite fit for the sickle. In such cases the narcotic generally turns out to be of an inferior quality, and before it is thoroughly quite dry is packed up and is exported. Being fresh, it meets with a ready sale; but if, for some reason or other, it is not sold off, it loses a great deal in weight by dryage. It is a custom with the cultivators to prepare the drug before the time and from unripe plants, should they find purchasers ready to buy it, otherwise the harvesting of ganja commences by the latter end of Mágh (second week of February) or at the beginning of Fálgún (middle of February), and is completed about the middle of March.

Time of Cutting.

55. As a rule, people who intend to make flat ganja reap the crop a few days before the plants intended to be made into round ganja are cut. These plants are kept in the field in expectation of the purchasers from Calcutta and its surrounding districts, who buy up the standing crop, and prepare the round hemp through their own men and at their own expense.

Joint Cultivation.

56. The system of hiring out ploughs and oxen is unknown in the ganja tract, but that of clubbing together and joining in cultivating the fields belonging to each member of the club is in vogue, and is adopted in the cultivation of the hemp lands. This way of assisting each other is called *dharani*. Those who own lands, but have no ploughs and oxen, are obliged to go half shares of the produce with those who help them with the needful, and these are called *adhidars* or *adhiars*. In that case the adhidar has to do all the ploughing and harrowing at his own expense, the owner of the land having to meet the demand of the landlord from his own pocket. In all other expenses incurred for raising the crop they go half shares. When the adhidar happens to be in indigent circumstances, the field-owner also advances money for putting fresh earth on the field, for the purchase of oil cake and, if necessary, of cowdung, and for payment of the poddar's fee, half of which is recovered from the cultivator after the drug has been sold. The adhidar has to stand all the expenses of manufacturing the ganja. If the cultivation ends in the failure of the crop, the owner of the land loses the money he has paid on account of rent and his own half share of the expenses incurred; but in case of his having made an advance, he recovers the other half from the adhidar.

License for Cultivation.

57. Before the passing of Act II (B.C.) of 1876 there was no legal prohibition in respect to the growth of the hemp plant, and the ganja cultivators could raise the crop without any interference of the excise officers; but since the passing of the Act the

people had for the first time this season to obtain licenses from the collectors of their respective districts before commencing business. The provisions of the law could not, of course, be strictly followed this time, inasmuch as there was some delay in explaining them to the ignorant cultivators, in obtaining from them written petitions, which, in itself, was a difficult and expensive thing with them, and in receiving licenses from the three districts of Rajshahye, Bogra, and Dinagepore. So late as November last, when the plants were about three feet high, I saw people come to the supervisor's office for licenses. It is not to be expected that the excise rules on the subject should suffice in the very first year of their operation to put down all unlicensed cultivation, but, on the whole, I think they have proved fairly successful. After a great deal of search I found only one man who had grown hemp without a license.

License for Manufacture.

58. In February and March, when the ganja attains its maturity, the cultivator proceeds to make arrangements for reaping the crop and preparing the drug. His first step is to present himself to the supervisor, show him the license under which he has grown the crop, and to obtain his verbal permission to remove the crop from the field. The supervisor, or one of his amlah takes down the number of the license and grants the permission solicited.

Place of manufacture.

59. The permission obtained, the cultivator has to clear a plot of grassy land for the manufacture of flat ganja; for round ganja a paddy field is preferred. It is cleared of all stubble and grass and made even with a *kodáli*. A couple of huts are then built on it for the shelter of the men who have to watch the crop, and for the accommodation of the agents of those wholesale goládárs who prepare their own ganja. I have never seen any such huts in the fields where flat ganja is manufactured, and my inquiries lead me to believe that none are made.

The place of manufacture is called *chátor*, in some places *kholá*.

Cutting of the crop.

60. For the manufacture of flat hemp, and where the plants have attained maturity, the cutting commences in the morning after the dew has disappeared from the ground; but in the event of the plants being prematurely reaped, the cutting takes place in the afternoon as well as in the morning. For the round ganja the plants are invariably removed from the field in the afternoon between 2 and 3 p.m.

Among the Hindu cultivators it is not usual to commence the cutting in the afternoon of a Thursday, or on any particularly unlucky day.

Among Muhammadans the sowing, the transplantation, and the reaping must all commence on a Friday, which, in their opinion, is a lucky and holy day.

In either case the entire crop is not removed from the field all at once, nor is the reaping done from day to day till all the plants are cut. A certain number of the most mature plants are selected, and so many of them are cut as can be manipulated and made into ganja in course of the day and the two following days with reference to the labour available.

In this way the reaping of the plants, which grow to a height of 3 to 8½ feet, the majority of them being about 5 feet high, goes on till it is found that there are no more plants in a fit state to be removed. If the cultivator or the agent of the wholesale goládár has other fields to look after, he starts the reaping there; if not, he waits till more plants ripen. Great care and expedition, however, are necessary in the carrying on of the manufacture, for the mature plants have to be removed from the field within three or four days after maturity, or else they wither away, and become perfectly unfit for the preparation of the narcotic. The best indication of maturity is the withering and falling off of the larger leaves. Most of the leaves at this stage become seared and yellow.

The *khásiá* or hermaphrodite plants are never touched except by mistake. They are left on the ground to wither, and are afterwards either thrown away or utilised as fuel.

61. The plants are cut with a sickle, leaving some 4 to 6 inches of the bare stalk on the ground. When some 50 or 60 plants have been cut, they are collected together and tied up in a bundle over a bamboo pole. In arranging the bundle, the heads of some plants are put on one side and of others on the other, so that the weight is evenly distributed over the pole. The bundle is carried on the shoulders of two men to the place prepared for manufacture.

Removal of crop to place of manufacture.

62. Properly ripened plants intended for the flat or *cháptá* ganja, and cut about 9 o'clock in the morning, are laid out in the sun on the grass of the *chátor* till about 1 or 2 o'clock in the afternoon, when the cultivator, or one of his people sits on the *chátor*, and, taking up each plant in his hand, cuts it into lengths of 1 foot to 2 feet. The useless twigs, *i.e.* those which have not borne flowers, are now separated from the ganja-bearing branches, as also portions of the bare stalk to the length of 4 to 8 inches, all of which are thrown away. Hermaphrodites which have been removed from the field by mistake are likewise rejected as useless. At dusk the selected stalks are laid upon the grass for exposure to the dew, and the men go home. In some places the cutting of the tops does not begin until the following morning, and the plants in that case remain spread out on the *chátor* for the night.

Manufacture of flat ganja. Rejection of flowerless tops and exposure to sun and dew.

63. On the following day, about 2 o'clock in the afternoon, the men, after having had their bath and meal, appear at the *chátor*. The twigs still lie exposed in the field where they were placed last evening, and now present a withered-up appearance. These are now collected and separated into bundles of three to ten twigs, in accordance to the size and dimension of the twigs. When the twigs are small, as many as eight to ten of them are taken to form one bundle, while of well-grown and many-branched thick stems three or four are held sufficient.

Making of bundles.

64. A *darmá* mat is now spread on the ground, upon which the bundles are placed one by one in a circular form, with their tops pointing to the centre and overlapping each other. The circle formed is about 14 feet in circumference. Over this ascend four or five persons, holding each other by the shoulders and commence treading and trampling upon them. They stamp and press down the plants with their right foot, while they hold them with their left foot. The pressing is continued for three to four minutes. When the ganja assumes the required shape, a person brings two fresh bundles and puts them on the fresh layer, and repeats the operation till a complete layer is formed while the trampling goes on. When the second layer is completely pressed, a third and a fourth, and sometimes a fifth, layer is formed, until the mass rises to the height of 1 foot. In arranging the bundles care is taken to put them so as to prevent them from running into each other, and being converted into one inextricable mass. One bundle slightly slanting from its next neighbour is enough to keep them distinct. In the particular field where I watched the manufacture of flat hemp, the stack was 1 foot high and 13½ feet in circumference, and comprised 1,326 tops of the hemp plant. The tramplers invariably make a bow to the ganja before they place their feet upon it. When the trampling of the whole mass is completed, and this takes about half an hour, the men get down, and the stack is covered with a couple of mats, upon which one or two men sit down. This procedure is called *jágdewá*. This stamping and treading under the feet is done with a view to give a flat shape to the ganja, and to force the small stipules and flowers to adhere to each other and form one mass. The resinous exudation on the ganja help this object very effectually. This process also causes the large useless leaves and seeds to fall off.

Manufacture of flat ganja; stamping.

65. About half an hour after, the men upon the stack leave their seats and the mats are taken off. A mat is now placed nearest to the stack, and another next to it. One or two men now begin removing the bundles from the stack in twos. They take them in their two hands, and, holding them over the nearest mat, beat them against each other with some force, which causes the seeds and crumpled up leaves to fall off. The bundles are then placed on the next mat in circular layers in the

Threshing and re-stamping.

same way as at first, and the treading and pressing are repeated, the top layer of the first stack being made the bottom layer of the last. About 4 p.m. the stamping ceases, and the process of covering up the stock with mats and of making one or two men sit upon it is repeated. The seeds and leaves which fall on the mat after the threshing are now gathered and taken up by one of the people in both hands, and form a height of about 4 feet, gently thrown on a mat. By this process of winnowing the leaves are blown out and the seeds deposit themselves on the mats. The seeds thus collected are carried home by the cultivator for next year's use.

Pressing of separate bundles.

66. About 20 minutes or half an hour after, three mats are placed lengthwise on the ground, one after another, and upon these the bundles from the stack are placed horizontally, and two or three men commence holding them with the left foot and pressing, and, passing the right foot from the stem to the top, they again gently retrace their steps, and resume pressing from the stalk end. As before, so now, one of the men takes up two bundles from the last formed stack, beats them against each other on a piece of mat or gunny cloth, and lays them in a single layer on the mats, each bundle being trodden upon for six or seven minutes. The bundles after being once pressed and trampled upon are turned upside down, and the process of trampling is repeated; when being turned, the plants are slightly beaten against the mats. The trampling is finished by sunset, when the bundles, which are now considerably reduced in size, being only of three or four twigs, are removed and kept in a slanting posture on the grass, and covered over with mats for the night.

Separating the stalks.

67. On the following morning, shortly after sunrise, the cultivator goes to his *chátor* and proceeds to separate the twigs that have got somewhat jammed with each other in the bundles. A circular stack of these, like that of the previous day, is then made and gently trodden upon by one or two men. When the whole of the ganja has been stacked and trampled, mats are put on the same. This is called *jorá bhangá*. The men then go home for their bath and meal, returning to the *chátor* by 10 o'clock.

Further stamping, threshing, and sun-drying.

68. A long line of mats is then made, while one of the men uncovers the stack and, making a bow to it, ascends and stamps his feet upon it for four or five minutes. The ganja is then unstacked, and, after being collected in bundles of three or four twigs, and gently pressed by the fingers, is laid upon the mats, bundle by bundle, in two rows, with their stems out and their heads meeting and overlapping each other. At about 11 o'clock two or three or more men commence stamping these with their feet with considerable force. At about 12.30 o'clock the bundles are turned over on the mats and the stamping continued. About three-quarters of an hour after the treading ceases, and the hemp is exposed to the sun for a short time, the tramping being again resumed for a few minutes. At about two o'clock the tramplers leave the mats, the twigs are now taken in hand, turned, and spread out in smaller bundles on mats and gunnies, and if these do not suffice, on grass as well. Ere the twigs are turned they are gently beaten on the mats. A few twigs having more leaves than others are kept in a standing posture in the sun. The mats are now full of dried leaves and seeds which have fallen during the process of tramping. The above process is locally called *khonchá*.

Pressing of separate twigs.

69. Shortly after two o'clock the process called *pátibhángá* is commenced upon, and one or more men stand upon the hemp now lying upon the mats, and draw their right foot, which is well pressed, from the stem to the top. The twigs are then turned over, and now, instead of the bundles, each twig is separately placed on the side of another and pressed with the right foot, while it is held down with the left foot. A little before four o'clock the twigs are gathered and arranged into bundles of 12 to 14 twigs. A large quantity of leaves, as also some seeds, fall, but a few seeds are still to be seen on the drug, which is now quite flat, all the bracts and calyces being formed into one hard mass.

Completion of manufacture.

70. The ganja is kept separate and the useless twigs are thrown away. Ten of these pressed tops are tied up into a bundle with strips of plantain or bamboo bark; they are removed

to the cultivator's house, where they are stacked in the yards in a circular form, the stems forming the circumference and the tops meeting in the centre; the central portion of the pile is covered with mats, the stems being left bare to dry. When the drying is complete, the drug is carried inside a room, where it is placed on bamboo platforms. Scarcely any *chûr* or *rorá* is formed from the flat or *cháptá* ganja at the time of its preparation. A few bits which detach themselves and drop off during the process of manufacture are picked up and made to adhere to the mass; a few that fall during the tying of the bundles are burnt

The bundles in which flat ganja is sold are, in a majority of cases, tied up after the sale. This year, however, the supervisor has been insisting upon the ganja being tied up into bundles for sale before license to retain the drug is applied for and granted. This will probably be done by the growers; but I have reason to believe that the wholesale purchasers will untie them and repack them after their own way.

Manufacture of round ganja; exposure to sun and dew.

71. The plants intended for the round ganja are, as already stated, cut in the afternoon at about three o'clock, and carried in bundles to the *chátor* precisely in the same manner as the *cháptás* They are then exposed to the rays of the declining sun and the dew of the succeeding night. The plants, when convenient, are also occasionally reaped in the morning.

At about eight o'clock in the following morning the people attend the *chátor* and proceed to cut the plants with sickles into sections of 1 to 1½ feet. Most of the plants are cut into from two to five pieces, while a few entire plants which have borne little or no ganja are generally rejected. A much larger quantity of bare stalks and many more useless branches are thrown away than what are usually rejected when manufacturing the flat hemp. The selected pieces are spread out in the yard in ranges to the action of the sun, with a view to render the leaves, the woody portions of the branches, as well as the clusters of flowers containing the resinous matter, a little stiff and otherwise suitable for the preparation of the ganja.

First course of rolling.

72. The people now return home, and after breakfast and an absence of about two hours come back to the scene of their labour. A little before noon mats are spread on two sides of a long bamboo bar placed horizontally on posts 4 feet high, and a number of the selected pieces is laid flat on the mats, and the men, 12 in number, ranging themselves in two rows, commence the process called *ekmalái*, or first rolling with their feet, holding the bar with both their hands for support.

In this process of *ekmalái* the feet are moved from the stalk end in the direction of the tops, rolling and pressing the pieces with considerable force. The bundles are made of 12 to 13 pieces of plant, but I saw a few much larger bundles, consisting of about 40 twigs each. Some, but not all, of the bundles are tied at the stem with a string. I was told that the more skilled labourers could manage the bundles without tying them. In the course of manipulation, or, more correctly speaking, pedipulation, the men spread out the untied bundles with their feet and the tied ones with their hands, in order to press and roll more effectually the inner portions of them. Each man presses and rolls the plants for eight or ten minutes, now and then taking the bundle up in his hand and shaking off the leaves from it. The larger bundles are trodden by two men. If the bundle recedes much from under the feet, it is generally rolled forward with the feet; it is then held fast with the left foot, and the rolling and pressing is resumed with the right foot. As each man finishes his bundle, and the plants have by this time assumed a roundish shape, it is carried to another part of the ground, and there laid out in the sun, twig by twig. The labourer gathers some 12 to 13 more plants and repeats the same operation. This is done to prevent the drying up of the juicy and resinous matter which has been squeezed out and mixed up with the narcotic-yielding portions of the plants. After an exposure to the sun of the trampled pieces for about a quarter of an hour, they are made to undergo a second trampling (*domalái*), occupying a shorter time, but precisely in the same way as before. The men then take their seats on the mats, and seizing three to

five twigs at a time, press and roll them hard with their hands. This is called *háth mutá*, which is finished in three or four minutes. This done, each twig is separated and laid on the ground by 2.30 p.m. If the people have no other work before them, the *háth mutá* is repeated after half an hour, and the plants, which have now been moulded into a round shape anddeprived of most of the useless leaves, are exposed to the sun in single twigs. A little after 4 p.m. two men collect them together and tie them up in bundles of about 100 twigs; these bundles are placed on mats, and covered over with them for the night.

Substitute for sun-drying.

73. A powerful sun is an indispensable necessity in the preparation of ganja, both flat and round. The cultivators never think of cutting the plants on a cloudy day; and if after the plants have been cut clouds appear in the sky, the manufacturers light a fire and hold the sections of the plants over it for about ten minutes before commencing th rolling process. Though art supplies to a certain extent what is denied by na ure, yet the benefit derived from this process is not unattended by certain evils, for the plants thus heated on fire assume an unnatural darkish colour.

Second course of rolling and dressing.

74. On the following morning the half-prepared round ganja is uncovered, and at about 9 o'clock the bundles are untied and, for the purpose of drying them in the sun, laid in ranges on the ground, piece by piece. At midday they are collected together in bundles of 15 to 20 twigs, and, if sufficiently dried, gently pressed between the hands, and once or twice rolled on the mat; but if the desiccation is partial, the usual way of the *ekmalái* is had recourse to for getting rid of the superfluous leaves, which by this time get pulverised and fall off, each bundle taking in manipulation only a minute or two, and the work is finished in less than an hour.

Tying of bundles.

75. The work of tying up the ganja in bundles (*ántis*) next commences. This is called *sherbándhá*, and is done by none but skilled labourers. The Jessore coolies are particularly good hands at this work, but of late some of the local labourers have also learned the business. The head man charged with this work sits down on the mat, having on his right and left two or three unskilled assistants, who select the serviceable twigs, cut them into smaller pieces, and place them by his side, and these he classifies into long, medium, and short sizes. The smallest twigs are at first taken up and arranged, those of medium size are next arranged and placed over them, and the longest, which are the best ones, are so placed round the bundle as to conceal and cover the other twigs. The bundle is then pressed by the hand and tied with a piece of thin jute string at the stem, a portion of which is now cut off with a sickle.

A good many twigs which have not flowered, as also those which have borne inferior flowers, together with a large quantity of the natural wood, are cut off and thrown away at this time. In short, every means is adopted and every attempt made to get as much ganja and as little of the ligneous matter as possible.

The tying of the bundles being finished, towards evening they are placed on mats in two parallel rows with their heads meeting each other and covered up with mats, and left under the weight of a bamboo for the night.

Drying the bundles and freeing them of leaves.

76. On the following morning, when there is no dew on the ground, the bundles are taken out, placed slantingly on mats against a piece of bamboo, and exposed to the rays of the sun till about 2 o'clock; then they are freed from any leaves that might have been left on them. The labourers, seated on mats, takes up bundle after bundle and roll it with some little force, and afterwards shake it on the mat. It is during this process thst small bits of prepared ganja break in the bundle and fall off. These, or rather the best of these, are preserved and trafficked as *chúr*. The men also take the bundles up in their hands, top uppermost, pass their fingers in search of superfluous leaves, and where there are any, gently press them with their fingers, or with small bits of ganja stem four or five inches long with sharp points and reversing the position of the bundles, give them two or three strokes with their hands which

make the dried leaves fall on the mat. A couple of minutes suffices for working off each bundle.

Ordinarily this process completes the preparation of the ganja. Should the superfluous leaves, however, continue to stick to the drug, the last process is repeated either on the same day, after a couple of hours' drying, if there be time, or on the following day, in the afternoon.

The above two proceedings are called *pátí bhángá*.

Wastage during manufacture.

77. When the drug is manufactured under the superintendence and at the cost of the wholesale goladars, who buy up the standing crop and prepare the drug themselves, much more care is taken, both in the selection of the plants and in the manipulation, than when the cultivators undertake the work on their own account, and the result is that there is considerable less wastage in the one case than in the other. There is, however, always, and under all circumstances, more wastage in the preparation of the round hemp than in that of the flat sort; but there is far less wastage in the preparation of the drug by the cultivators than by the goladars, inasmuch as none but the worst twigs only are rejected by the former, while the latter or their agents, take the good plants and reject the rest, and do not allow the mixture of any inferior article.

Stacking.

78. The ganja after the final process above stated is ready for storage, but it is not stored until the whole crop is manufactured. Logs of wood are placed on the ground and over them are arranged horizontally a few pieces of bamboo, and over them some sticks, which are generally the bare stems of ganja. Upon these are piled bundles of prepared ganja, the arrangement being almost the same as that for the stacking of the flat crop already described, with this difference, that during the day the centrical portions, consisting of the ganja tops, are carefully covered with thick clothes or quilts, the outer line of stem ends is left exposed to the sun to dry, while at night the whole stack is covered with darma mats. When all the manufacturing operations are completed the bundles are made into bales commonly called *bastás*, wrapped up in thatching grass, and carried to the house of the cultivator, or, when the crops of several cultivators have been manufactured by the wholesale dealer and paid for, to the house of one of the cultivators. In case of rain being expected, the drug is removed into one of the sheds erected on the *chátor*. The bundles are so carefully tied that they never get loose, though the *bastás* sometimes do.

Licence to retain possession of ganja.

79. When the ganja, both flat and round, belonging to any one person has been manufactured, and the drug has been properly arranged in bundles, the cultivator, or the agent of the wholesale goládár, if he has bought the standing crop and prepared the drug at his own expense, presents himself before the supervisor and applies for a licence to retain possession of it. This licence is made out in the form prescribed by the Board's rules, and, as far as I have seen, is granted without any inquiry. The drug is then either stored up or at once sold. Unfurnished with this licence, nobody can legally sell the drug.

Ordinarily the cultivator or the wholesale dealer's representative does not apply for licence until after he has closed his *chátor*; but when an intending purchaser presents himself to buy the new hemp, he makes his application to the supervisor as soon as he has finished the preparation of the drug of one entire plot of his several hemp fields, it being a general rule not to grant the licence until the crop of one entire field has been manufactured.

In previous years such application was verbally made, and the supervisor's amlah used to record the purport of it in their books; but this year, under orders received from the Rajshahye Collectorate, every ryot has had to make a written application for a licence, which is not only expensive but harassing to him.

New rules about licences.

80. Formerly the wholesale goladars of Calcultta and its surrounding districts, who had the round ganja prepared at their own cost, used also to take out the licence to store the manufactured drug in their own names; but this year a different course has been adopted. In the licences granted by the authorities of Rajshahye

to permit the cultivation of the hemp plants under Act II. (B.C.) of 1876 certain conditions have been laid down, one of these being that the growers of hemp shall not be able to sell it, even in an unprepared state (which means the standing crop), to anyone who has not procured a written permission from the Collector of Rajshahye to purchase it. The goládárs' agents, not having been at Nowgong at the time when the licenses were issued, were not aware of the existence of this condition; and when they arrived at the place in the latter end of January and on the commencement of February, they thought it would be a dilatory and troublesome affair to go to Beauleah, some 56 miles distant from Nowgong, and determined upon advancing money to the cultivators for the preparation of the round ganja and superintending the manufacture themselves, allowing the cultivators to obtain the licenses in their own names and to store the drug until the agents would obtain import passes from their respective districts, when they would remove the drug as if they had just then purchased it.

I was particularly desirous of finding out whether the supervisor caused any kind of inquiry to be instituted before granting the licenses to store the ganja, but I failed to learn that any such inquiry was made. In fact, the supervisor has not the means of making such an inquiry, as he has not men enough to go to the *chators*, or to the houses of about 2,000 men.

Storage.

81. The license secured, the drug is stored in the houses of the cultivators. During my stay at Nowgong I took the supervisor with me, and visited several places used for the storage of ganja. I found it stored at every convenient nook or corner, without any care or guard. I saw a quantity of flat ganja kept in a cowshed situated in an open place and without any doors in the house of one Fakir Bakhsh. In one Piru Mandal's place I found some hemp lying in an open verandah of a room in the house. In the homestead of one Chhedor Mandal there was a large quantity of round ganja lying in an open hall of the house on planks placed on the floor. I also saw some flat hemp kept in an open room and inside a cowshed in the house of a respectable ryot named Kukur Sardár.

Advances.

82. As a rule ganja is not grown under advances, but the brokers, when they find it to their interest, advance money to the growers during or after the preparation of the drug, and even at times when the crop is on the ground. These men, on hearing from their constituents of their intention to arrive at the producing district at a certain time and to buy so much and such a kind of drug, place themselves in communication with some of the cultivators, and, after settling with them the quantity to be bought and sold and its price, give them something by way of earnest-money. In such cases the prices then ruling in the market are the prices at which the bargain is struck, though the drug has to be actually bought and paid for months after. It also happens that a contract is made for the one to sell and for the other to buy at the rate prevailing in the month of Chait (March—April). Brokers also make advances on their own account, intending to make a profit by selling the drug when the market rises.

Advances are generally made to the growers of hemp in the months of December to February. Whatever advance system prevails, it does so in respect of only the flat ganja, but not of the round-shaped drug nor the chúr. Advances are made both to growers and fariahs, the latter of whom act in subordination to the brokers.

"Chur" or broken ganga.

83. Under the excise rules a separate rate is fixed for the variety of ganja called *chúr*. This drug is held to be more powerful than round ganja, and therefore the duty on it is rated at four rupees, while round ganja is charged at the rate of three rupees. This variety, however, is not the produce of any particular and special mode of manufacture, but the result of the two processes described under paragraphs 64 to 78. In the process for making flat ganja, when the bundles and bales are being tied, portions of the flowers on the spikes drop down broken, and such parts of it as cannot be pressed on the spikes and made to stick thereto are kept separate; in rolling the round ganja the same breakage also occurs, and the fragments cannot conveniently be made to adhere to the rolled spikes,

so they are kept separate; and these broken bits, resulting in the course of the two processes, constitute *chúr*, which literally means "broken" or "powdered." As they consist principally of the female flowers with all their resinous matter in and on them, and includes no stalk or sticks of any kind, they contain weight for weight more narcotic matter than the flat and the round drugs, which are made up of nearly one-half of woody stalks. This *chúr* is also known under the name of *Rorâ*.

Influence of weather.

84. A hemp plant will stand a moderate amount of rain after its roots have struck well, provided the rain water is not allowed to accumulate round the roots. A fine dry weather to the end of December is, however, what is most desiderated. A shower of rain in January is welcomed by the cultivators, as it saves them the trouble of having recourse to one more irrigation. But when the plants begin to flower in clusters and the resinous matter is formed, rain spoils the ganja, as has been the case this year, in consequence of too much sap running up the plants and causing new shoots to sprout between the flower bunches.

If a strong wind lowers the head of the plants at any stage of their growth, bespattering them with mud, they soon die. A violent blast sometimes uproots and prostrates the plants.

A fine sunny day is essentially necessary for the manufacture of ganja, and people will rather suffer the plants to die in the fields than think of harvesting them when the sky is overcast with clouds.

Insects which injure the plant.

85. At the time of inflorescence the rains favour the birth of a kind of green insect called *hírkati*, which attacks and nips off the tender shoots and flowers; and a sort of green weevil called *sidlepoka*, which marks with black spots the parts of the plant attacked by it, is also injurious. I observed these sooty spots and made inquiries about them. The spider is another pest; those portions of a plant which are enveloped by its webs wither away and yield no ganja.

Blight.

86. *Kharkhari* and *gorjali* are the names of two sorts of blight from which the plant is known to suffer; the one dries and crumples up the leaves, the other at first embrowns the stem and ultimately kills the whole plant.

Fallow and rotation of crops.

87. Notwithstanding the repeated ploughing and manuring detailed above, ganja cannot be grown on the same field for two successive years. The produce in the second year is hardly sufficient to cover all out-goings, and in the third year it is a positive failure. The cultivators are therefore obliged to sow the same field with ganja every fourth year, devoting the fields to other crops during the interval. The ganja crop would have much improved if the people could afford to sow the same field with hemp after keeping it fallow every three years; but the rent is heavy, and the peasantry generally poor, they are therefore unable to do so as a general rule. The hemp is reaped in March and followed by jute, which in that part of the country is sown in May and harvested in October, when mustard takes its place, and leaves the field in February. Ganja land is also sown with potato, turmeric, tobacco, early rice, ginger, and other vegetables. Only those who can afford it, and their number is small, keep the land fallow during the year preceding that in which they intend to grow the hemp; but this is not common. This incessant taxing of the productive powers of the land results in deteriorating the quality and reducing the quantity of the drug There has been of late a marked decrease in the size of the floral clusters and a deficiency in the resinous matter.

The cultivators spare no trouble and expense, and try their best to manufacture good ganja; but with an exhausted soil they cannot prevent deterioration. What they seek for is virgin soil or unreclaimed land in their neighourhood, but this is not always available.

In the northern and western parts of the Ganja Mahal there are jungles, which the people are gradually clearing and bringing under cultivation. The narcotic in these places and in parts where the cultivation has been only recently introduced is very good; but the total area of such tracts is not large, and the poorer classes are obliged to resort to inferior lands for the cultivation of the drug. Even on virgin soil the extent of ploughing and manuring

required is by no means small. The villages lying to the east and south of Nowgong are known to grow medium and inferior ganja.

The hemp-cultivating class.

88 The majority of hemp cultivators throughout the ganja tracts are Mahomedans, and less than one-eighth of the class are Hindus, consisting of *Kaibartas*, *Nápits*, *Bhumiás*, *Málákárs*, and *Jugis*. There is, however, nothing peculiar in these people which mark them as distinct from the ordinary run of the people in this part of the country. The majority of the cultivators cannot read or write, and not a single man among them keeps an account of the sums expended by him in growing the crop.

In the Ganja Mahal the weddings in the families of the hemp cultivators are, as a rule, celebrated in the months of Jeyt, Assár, and Srában, when the sale of the drug is over, and when they have paid out of the proceeds thereof the zemindar's rent.

Capital.

89. Some of the hemp-growing ryots are well-to do men, who use their own capital; the rest raise the requisite money by borrowing at rates of interest varing from one-half to three-fourths of an anna per rupee, upon the pledge of their lands and ornaments, or on verbal contracts only, and pay off the debt from the sale proceeds of ganja.

It sometimes happens that a few imprudent men assign away their entire future crop of hemp on receipt of a loan of money. They sell the crop on the creditor's account, and make over to him the sale proceeds. There are instances in which ganja brokers make advances to the growers from time to to time, and give them clothes on holidays, and in return take from them all that the drug prepared by them fetches. I have also been told of cases in which the creditors, besides getting back the money lent, have been allowed to enjoy a half or one-fourth share of the profits of the sale. The profit realised by the grower of hemp on a bigá of land varies from Rs. 25 to Rs. 50.

Cost of cultivation.

90. It is difficult to form a correct estimate of the cost of cultivating a bigá of land with hemp and of preparing the ganja, as some works are done by hired labour, while others are performed by regular servants of the house, who are employed throughout the year, supplemented by the labour of the male members of the family. In respect of the cultivation, the peasant is out of pocket by about Rs. 22 per bigá on account of the following expenses :—

	Rs.	*a.*	*p.*
Putting fresh earth on the ganja field	4	–	–
Oil-cake	5	–	–
Fee of the ganja doctor, including his feed	3	6	–
Irrigating charges	6	–	–
Rent	3	8	–
TOTAL *Rs.*	21	14	–

To these have to be added the wages of the servants of the house, the value of the labour of the members of the family themselves, the hire of the plough as prevailing in other villages in the district, as well as the price of the cow-dung; all of which taken together, would come to Rs. 50 or Rs. 60. The true cost of cultivation may therefore be stated in round numbers to vary from Rs. 50 to Rs. 60 per bigá. The rent referred to above is an average; there is no special rate for ganja land, but the prevailing rate for other rich crops applies to it.

Cost of the manufacture of ganja: (a) Flat.

91. The cost of manufacturing the ganja is generally about Rs. 2-8, and does not exceed Rs. 3-8 per maund, if the work is done by hired labour; but in many places the drug is prepared by the male members of the family themselves, assisted by their regular servants and relatives.

When the standing crop is bought up for the manufacture of flat ganja, the wholesale goládárs' agents, who do not work themselves, have to spend about Rs. 4 for the preparation of every maund of ganja.

 92. The

Cost of the manufacture of ganja: (b) Round.

92. The cost of preparing round hemp is considerably greater than that of the flat sort, on account of the skilled labour required for its manipulation and the greater amount of care and time necessary in its preparation. The expense in this case is, however, defrayed more frequently by the agents, on account of the wholesale goládárs, who buy up the standing crop; and as they keep regular accounts, it is not so difficult to come to the amount of money laid out for the purpose. I give below the expenses actually incurred by one of the wholesale goládárs of Calcutta last year in preparing 195 maunds and 30 seers of the drug:—

	Rs.	a.	p.
Standing crop	2,826	14	–
Wages of local labourers	1,438	12	6
Wages of Jessore coolies	240	–	–
Lodging expenses of the agents, &c.	180	8	6
Petty charges, such as purchase of mats, oil, jute, &c.	164	2	
Wages of gomáshtás	541	7	6
Charges for cashing note	46	6	–
TOTAL Rs.	5,438	2	6

This shows that the cost of preparing each maund of the round ganja, exclusive of the value of the green plants, was Rs. 13-5-3, and inclusive of that item, Rs. 27-12-3.

The cost to another goládár of manufacturing 224 maunds of round ganja was as follows:—

	Rs.	a.	p.
Green plants	3,125	7	6
Local labour	2,017	13	9
Jessore labour	195	8	–
Petty charges	174	15	6
Wages of agents, &c.	206	15	3
Feeding expenses of the agents, &c.	112	3	9
Charges for cashing notes	102	1	3
TOTAL Rs.	5,935	1	3

In this case the total charge was Rs. 2-7-6 per maund, and of preparation Rs. 12-8-6. The average of the sets of figures in the two cases shows the approximate total cost of the round drug to be Rs. 27-2 per maund, and of manufacture Rs. 12-14-6.

To the cultivator who prepares his own ganja the cost is much less. He and his kinsmen and regular servants all work together, and the cost of preparing the drug is reduced to Rs. 5 or Rs. 6 per maund, exclusive of the value of his labour.

There are one or two wholesale dealers of Calcutta, who, after buying the standing crop, make over the business of manufacturing the drug to one or two Jessore men, who undertake to prepare the round hemp at the contract rate of Rs. 7 to Rs. 9 a maund.

The item for cashing notes is excessive; it amounts to nearly two per cent. on the total outlay; but the absence of bankers in the neighbourhood of the ganja mahal renders this unavoidable.

Produce; ratio between green plants and prepared drug difficult to ascertain.

93. From the details given above of the culture and manufacture of ganja it must be evident that the weight of produce must vary greatly according to the time when note is taken of it, the kind of drug prepared, and the conditions of the soil and season of cultivation and manufacture. Leaving out of sight soil and season, it must be obvious that the whole crop of hemp grown on a given area is not utilisable for the manufacture of ganja. In the first

first place, the hemp doctor's destruction of the male plants considerably reduces the total number of the plants composing a crop. Next, amidst the female plants on the field there are many non-flowering khasias or hermaphrodites, which are not heeded, and are allowed either to stand on the field after the reaping, or, when cut along with the female plants, subsequently picked out and thrown away. Then there is no fixed ratio between male and female plants in different fields, in some localities the former predominating, while in others the latter, and of these factors the number is more or less unascertainable. The ascertainment of the total number of green plants in a crop of hemp on a given plot of land is therefore of no value for any practical purpose. Inasmuch, however, as one of the points of inquiry laid down in the orders conveyed to me referred to the yield of green plants, I took notes in several fields for the settlement of the question, trying to eliminate the various sources of error in arriving at a correct estimate.

Number and weight of green plants per biga.

94. I examined a plot of ground under hemp belonging to one Jabandi Parámánik, which measured two bigás and three cottás. The total number of plants of all sorts were counted out, and found to be 9,254. After three plucking operations of the poddár the number was reduced to 4,725; out of these, 1,160 plants were reaped for experiment, from which again were rejected 34* non-flowering plants, and the remaining 1,126 plants, almost fresh from the field, being weighed, came to 10 maunds 28 seers. Calculations based on these data led me to the conclusion that a bigá of land yielded 4,304 green plants of all sorts, and 2,134 green female or ganja-yielding plants, weighing 20 maunds 11 seers.

In two other experiments, in which the plants cast away at each plucking were numbered, showed that in one case the total number of green plants and the number of ganga-yielding plants on a bigá of land were 7,725 and 3,600 respectively, and in another case 6,500 and 2,915 respectively. Divers other investigations in different localities varied these figures more or less.

Taking these variations into account, and bearing in mind the fact that when a given number of plants, after several pluckings, is cut from the field for experiment they are necessarily more free from the mixture of non-ganja-yielding plants than those on the field from which they had been reaped, I have come to the conclusion that a little more than 51·6 per cent. would give very approximately the number of plants left on the field after three pluckings, and that a deduction of 15 per cent. from the last-mentioned number on account of khásiás and wastage would give very nearly the number of ganja-yielding plants. This proportion, which has been verified by several trials, gives an average per bigá of 6,667 green plants of all sorts, and 2,658 of the ganja-yielding variety, the weight of the latter in the green state being 38 maunds.

Quantity of prepared drug per biga.

95. With a view to ascertain the total yield of prepared ganja, I took an untouched field of hemp at harvest-time and noted its area and the number of plants in the standing crop both before and after the several pluckings. A definite number of plants was reaped out of those left on the field after the hemp doctor's clearing operations, and in their green state, almost fresh from the field, they were weighed prior and subsequent to the necessary pickings that take place after the reaping; they were then cut into a certain number of pieces of the usual size, and these pieces were weighed before and after the rejection of the useless portions at the second stage of picking. The ganja prepared therefrom was then weighed, after allowing it to dry or to be exposed to the sun and dew for a given number of days. How many bundles of the usual size are made of this weighed

* This number is extraordinarily small, and it is due perhaps to the reaping having been made with as much selection of the female plants as possible; for in other cases the number rejected from certain quantities reaped were large.

weighed drug was also noted and the bundles finally weighed. The results of two such trials are summarised belows :—

	Experiment No. 1 for the Flat Ganja.	Experiment No. 2 for the Round Ganja.
	Field owned by	
	Jabandi paramanik.	Sham Sardar.
Area	B. 2 C. 3	B. 1 C. 11
(*a*) Number of plants in the full crop	9,254	7,892
(*b*) Ditto ditto left after pluckings	4,725	3,996
(*c*) Ditto ditto reaped for experiment out of (*b*)	1,160	2,380
(*c*1) Ditto ditto khasias picked out of (*c*)	34	71
(*d*) Ditto ditto cut into pieces out of (*c*)—(*c*1)	545	2,309
(*e*) Ditto ditto not cut out of (ditto)	581	—
(*f*) Number of pieces into which (*d*) were cut	2,506	4,758
	Mds. S. C.	*Mds. S. C.*
(*h*) Weight of (*c*)—(*c*1) in the green state	10 28 0	40 30 0
(*i*) Ditto of (*f*) and (*e*)	2 20 8	15 32 8
(*j*) Ditto of stuff rejected and wasted in bundling (*f*) and (*e*)	0 4 8	3 15 0
(*k*) Ditto of ganja prepared from (*f*) and (*e*), and made into bundles	1 24 4	4 27 8
(*l*) Number of bundles in (*k*)	42 bundles.	443 bundles.
(*m*) Chur not weighed.		

After repeated trials the conclusions I arrive at are—*first*, that in the case of flat ganja 1,000 female green plants yield on an average 2 maunds 1 seer 6·5 chhataks of the dried plant or the prepared drug; *second*, in the case of the round ganja the same number of female green plants yield 1 maund 19 seers 12·1 chhataks of the dried drug; and *third*, that the average yield per biga of the prepared ganja of the flat sort is 5 maunds 16 seers 6-65 chhataks, and of the round sort 3 maunds 31 seers 13 27 chhataks.

(a)—Number of bundles of flat ganja to a maund by weight and by estimate.

96. In the experiments made I found that in respect of the flat ganja, in one cases 14 bundles weighed 14 seers 7 chhataks, in a second 6 bundles weighed 8 seers 12 chhataks, in a third 16 bundles weighed 18 seers 8 chhataks, in a fourth 120 bundles weighed 2 maunds 22 seers 8 chhataks, and in a fifth 87 bundles weighed 2 maunds and 30 seers. These figures show that 33 bundles of the dried flat ganja plant weigh one maund. To test these results and to ascertain what number of bundles is usually accepted to weigh one maund by estimate, I repaired to the supervisor's cutcherry and there elicited the following facts. This sort of ganja is brought there in packages each containing 20 bundles, two of them being usually estimated to weigh one maund, which supposition regulates the uniform number of bundles for making up a package; but by actual weighment, which the officer has always recourse to, I found in one case 23, in another 33, and in a third 45 bundles were required to make up a maund. The average of these three numbers coincides closely with the average determined by my other experiments. It may therefore be fairly stated that 33 bundles on an average make a maund of flat ganja by actual weighment, and 40 uniformly by estimate.

(b)—Number of bundles of round ganja to a maund by weight and by estimate.

97. As regards the round ganja, in one case 443 bundles weighed 4 maunds, 27 seers, 8 chhataks; in the second 105 bundles weighed 1 maund 7 seers, and in the third 92 bundles weighed 36 seers. Working out an average from these figures, I find 95 bundles to be equivalent to a maund. This variety of the drug is generally made up in bales supposed to be one maund each; occasionally, though very seldom admitted, half-maund packages are also made up.

I examined different bales estimated to weigh one maund each, and found their contents to vary from 60, 80, to 100 bundles. By actual weighment packages of 60 bundles required in different cases to be increased to 90, 100, 105, and 110 bundles to weigh one maund; those of 80 bundles to be increased to 83, 84, 85, 92, 93, and even 113 bundles; and those of 100 bundles to 102, 103, 110, and 111 bundles.

The

The average of the several averages of the above figures gives 80 as the number of bundles representing a maund of round ganja by estimate, and 95 as the number of bundles making up the same weight by actual weighment. This last-mentioned figure also coincides very closely with the number determined by other experiments.

Yield of the round ganja in a given year.

98. With a view to determine the relative proportion of the total yield of the prepared ganja of the two sorts in any given year, I referred to official returns of the year 1873–74, 1874–75, and 1875–76, and found that the exports and the quantities left in the cultivators' godowns in each of those years to be as stated on the margin. The average of these figures is 1,987 maunds 39 seers per year. Now, having ascertained that 1,000 female green plants and a bigá of land yield respectively 1 maund 19 seers 12·1 chhatáks and 3 maunds 38 seers 13·27 chhatáks of this sort of ganja, I find the number of female plants required to yield the said average, 1,987 maunds and 39 seers of ganja, to be 1,330,737, and the area necessary for the cultivation of the said number of plants 500 bigás 13 cottás.

Round Ganja.

	Mds. S.	*Mds. S.*
1873–74:		
Exported - -	1,508 22	
Left unsold - -	209 19	
		1,718 1
1874–75:		
Exported - -	1,627 0	
Left unsold - -	85 10	
		1,712 10
1875–76:		
Exported - -	1,397 34	
Left unsold - -	1,135 32	
		2,533 26

Ditto of flat ganja.

99. The table given on the margin of the of the total quantity of flat ganja produced during the last three years gives an average of 8,843 maunds 39 seers 4⅓ chhatáks per year. This quantity would require, at the rate calculated in paragraph 94, of 5 maunds 16 seers 6·65 chhatáks per bigá of standard measurement, an area of 1,634 bigás 12 cottás and 9 chhatáks. Adding to this the probable area for the drug, I make a total of 2,135 bigás 5 cottás. To this, however, has to be added a sufficient area for about 5 to 20 maunds of chúr, which may be roughly set down at 5 bigás, and another 137 bigás and 9 cottás for dryage and wastage, making a grand total of 2,277 bigás 14 cottás. The reported total of area cultivated during the past three years under notice, as shown on the margin, gives an average of 1,992 bigas 6 cottas, showing a difference of 285 bigas and 8 cottas.

Flat Ganja.

Year.	Export.	Quantity left unsold in the Collector's Houses.	Total.
	Mds. S. C.	*Mds. S. C.*	*Mds. S. C.*
1873–74 - -	8,703 36 11	759 39 0	9,463 35 11
1874–75 - -	8,908 37 4⅓	78 20 0	8,987 17 4⅓
1875–76 - -	7,419 26 14⅓	660 38 0	8,080 24 14⅓
Average - - -			8,843 39 4⅓

Year.	*B.*	*C.*
1873–74 - -	2,407	19
1874–75 - -	2,278	24
1875–76 - -	1,290	2
Total - - -	5,977	5
Average - -	1,992	6

Relative proportion of the two kinds of ganja.

100. The figures above given show a relative proportion of the flat ganja to the round drug as 2 to 7 or 1 to 3·5. Now, the total area of the ganja fields of Nowgong actually under cultivation in 1876–77, as determined by me by careful survey, was 3,111 bigas, which ought to produce a total of 2,07,41,037 green plants; and deducting therefrom 60·132 per cent. of non-productive plants (males and khasias), we have a total of 82,69,038 female plants fit for producing ganja. Of these, two-sevenths, or 23,62,582 plants, devoted to round ganja would yield 3,529 maunds 19 seers of the prepared drug; the remainder, devoted to the flat drug, would produce 12,020 maunds 22 seers, making a total of 15,550 maunds. The total area reported as under hemp was 1,290 bigas 2 cottas, and this, devoting two-sevenths of the round hemp, would show an area of 368 bigas 12 cottas, and a yield of 1,463–24 maunds five-sevenths, and for flat ganja an area of 921 bigas 10 cottas, and a yield of 4,985–20–12 maunds, or a total yield of 6,449–4 maunds. The actual yield was 6,496–29 maunds, or only a few

few maunds above what would have been reasonably expected. The causes of this difference will be referred to in a subsequent paragraph.

Sale of seeds, seedlings, &c.

101. In the ordinary course of ganja cultivation seeds are rarely bought and sold. The cultivator carefully preserves the seeds which drop from the plants at the time of the manufacture of the narcotic, and these ordinarily supply all his requirements. Seeds are kept either in a basket or in an earthen pot. When a cultivator has more seeds than he requires, and this is not unusual, he either gives them away free of charge to his relatives and neighbours, or sells them to those who begin the cultivation for the first time, or who require more seeds than they have been been to secure. A portion of the seeds is sold to oilmen, who extract oil therefrom and mix it with mustard oil. I have not been able to collect sufficient data to give even a rough estimate of the quantity so sold, but it is small. Ganja seeds are also occasionally baked and eaten like parched rice.

Seeds are sold very cheap, being at the rate of three to four annas per *don*, which is equal to three seers.

Seedlings are also occasionally sold at the rate of four small bundles for the rupee. Roughly estimated, young plants worth two rupees suffice for a biga of land.

Cowdung is occasionally bought and sold for manuring the hemp fields; generally 16 basketsful of it are purchased for the rupee; it is also sold in heaps, the price being fixed with reference to their size.

The bare stalks of the ganja plants, the hermaphrodite plants, and portions of the plants which are rejected, as also the leaves, are burnt down on the *chators* of flat hemp, but they are utilised in the *kholas* of round ganja, where some of the men stop during the night, and where fires are kept after dark.

Sale of ganja at Nowgong.

102. It has been already stated that on the completion of the manufacture both of the flat and round drug a license under Clause 3, Section 17, of Board's rules for cultivation, storage, transport, and sale of ganja is applied for and obtained from the supervisor, after which it is either sold at once from the *chator* or removed for storage to the cultivator's house. In the case of flat hemp the license is invariably granted to the person who has grown the crop; but, in the case of the round sort, it is given, according to circumstances, either to the cultivator or to the wholesale goladar or his agent, who has purchased the standing crop and prepared the ganja at his own expense.

The contract for the sale of flat ganja, and also of the round drug when prepared by the cultivators on their own account, is made soon after the completion of the manufacture, and not unoften, as already stated in paragraphs 82 and 89, long before; but the delivery is not made all in a lump, but in driblets, according to the means and requirements of the purchasers, the transaction spreading over a twelvemonth or more. The stock therefore remains with the cultivators. Sometimes, but rarely, even contracts are not made immediately after the completion of the manufacture. As a portion of the drug covered by the license is sold or delivered, the purchaser is made to fill up columns 1, 2, 3, and 4, and the supervisor column 5 of that record, and this is done as each delivery is effected; and when all the drug has been given out, the document is returned to the supervisor and filed in his office.

The sale of ganja is not always made for ready cash. Indeed, in the majority of sales, only part payments are made, and the balance promised to be paid on a subsequent date; but in many cases the debt thus left behind by the dealers is not entirely discharged. As a rule, the cultivator sells his drug to the wholesale dealer's agent on the guarantee of the broker, and in some instances he sells it to the broker without ever seeing the face of the actual purchaser; but when the time of making the promised payment comes, the brokers declare that they had not received money from their constituents, and consequently cannot pay the ryots. Sometimes the brokers pay them something once or twice, but the balance in full is rarely paid. At times the brokers have been known to go to the goladars' houses, or to send their people to them for money due by them, and thereby realise a portion of the price of the narcotic, but that portion is rarely paid to the growers. No formal document is executed by either

either the brokers in favour of the growers, or by the purchasers in favour of the brokers. A short account, something like a *hath-chitta*, on a loose piece of paper, is left by them with the brokers, and that is all. I have known of instances in which a few intelligent and well-to-do brokers had sued some of the goladars in the civil courts; but everyone cannot afford to do that, and as for ryots, they are perfectly helpless; all that they do as a means of realising their dues is to lay the matter before the zemindar; but they soon find out that, while the landlord's pockets have been lined, their position is not at all improved.

Oftentimes a wholesale dealer in ganja finds another way of cheating the ryots, and that is by making the payment in kind. They send or bring with them clothes, shawls, brass and bell-metal utensils, *sitalpâti* mats, fans, &c., and these they give to the cultivators in lieu of cash for prices much greater than their ordinary value. The ryots, instead of losing all, prefer to accept anything they get.

Goladars, actually owing hundreds of rupees to a broker or cultivator would, without the least hesitation and without the least qualm of conscience, come to another broker, and through him purchase and take away his supply of flat ganja, and this time, too, on credit. Dealers who are notorious bad paymasters are welcomed by the cultivators, and accommodated, from the fear of not at all finding a purchaser for the produce of their fields.

In short, the system on which the ganja trade is based is so unsound that one broker, named Quazí Ekímúllah, has to get no less than 10,000 rupees from some of the wholesale goladars, and taking the debt owing to all the ganja-growing tenantry, I estimate the sum at more than 57,000 rupees. There are a number of Mussulmans, all inhabitants of Kushtea, in the district of Nuddea, who own registered warehouses at Kushtea, Monghyr, and Bhagulpore, and who are notorious bad paymasters, and there are others beside them who cheat the ryots in a lesser or greater degree. Of course all the bad ganja is sold to these men, and that, too, at prices somewhat higher than those ruling in the market. The ryots at the time think in their minds that they have got rid of an unmarketable stuff, but they regret the transaction afterwards.

Evil consequences of the license.

103. The consequence of granting licenses to goladars for the round drug is not unoften very hurtful to the cultivators, for if the wholesale dealer fails to remove any portion of the prepared narcotic within a short time, the cultivator, though the custodian of the article, for it is left in his house, cannot sell it, the license to store and sell the same being in the name and in the actual possession of the wholesale dealer or his agent. In such a case the cultivator, strictly speaking, retains the drug without a license, and is often pounced upon by the police, sent in to the courts for trial for having in possession ganja without a license, and convicted. When I was encamped at Nowgong a number of the ignorant ganja growers were, on the above grounds, prosecuted by the police and subsequently fined at Bogra. Had the supervisor been mindful of his duties, and been constantly on the move in the hemp mahal, he would have found out these irregular practices himself, and remedied them. The goladars and their agents do not stay at Nowgong all the year round; they go away to their houses, or their principals' places, with the licenses, returning only to Nowgong at times when they want to remove an instalment of the drug, and consequently they are at times beyond the reach of the ryots. It is true that these dealers when leaving the place inform the supervisor of their having left so much narcotic in such-and-such ryot's house, but that does not shield the latter from a criminal prosecution, and from subsequent punishment. I am aware of a few cases which occurred in Bogra in only February last, in which the supervisor deposed to the drug found in the houses of the ryots being protected by proper licenses taken away by the goladar's agent; but the court thought that that was not enough, and found the men guilty.

In those cases in which the drug, though prepared by the dealers, is covered by the licenses which have been taken out in the names of the cultivators, such consequences are always avoided; and when they find that the goládárs have not paid for and removed the drug in time, they find themselves compelled to sell it to others, thereby making the party who had prepared the ganja at

his own expense a loser. To guard against this the dealer generally induces the cultivator to consent to the license being taken in the dealer's name, and having once got it, he retains the same with him, even when he is away from the district. It may be said that the goládárs, having purchased the plants and manufactured the drug at their own expense, should store the drug on their own account, or remove it at once to their respective registered warehouses; but, as a rule, the class of men who deal in hemp are too poor to pay the value of the standing crop all at once, and at the same time incur the expense of manufacturing the drug; and as the ryots will not, naturally, allow them to remove the narcotic, or, at least, the entire quantity of it, without at first getting paid for it, they are obliged to keep it in the house of no other but the cultivator from whom they have bought the green plants. It is in the power of the local excise officers to put a stop to this practice; and I am of opinion that the license to store and sell the ganja should never be given to a dealer who will not agree to remove to his own custody the entire quantity of the narcotic soon after its preparation. No dealer in either sort of ganja has a place of his own in the ganja mahal for the storage of his purchase, except one man of Patna, who stores the ganja he buys in his own place.

The Collector of Bogra has kindly furnished me with a long list of cases of ganja smuggling which occurred in his district in 1876-77, the majority of which, I find, are cases of the above nature. In short, the ryots of Bogra have been so much alarmed on account of the prosecutions recently instituted by the Bogra authorities, that I apprehend many will shrink from growing the hemp in future years.

Export of the two kinds of drug.

104. It has been stated in paragraph 23 that the two kinds of ganja are not held in the same estimation in different parts of the country, some preferring the flat and others the round kind. On the whole, the demand for the former kind appears to be considerably greater. The round variety is consumed principally in Calcutta and its neighbourhood. Annexed (Appendix C.) is a statement showing the places to which flat hemp is exported, and those to which the round ganja is taken.

In season 1875-76 a small quantity of round ganja was, as an experimental measure, imported into Dacca and Backergunge, while a corresponding quantity of flat hemp was taken to Beerbhoom; but in neither case did the new importations find favour with the consumers, and up to January last no material portion of these imports had been sold. I have already, in the early part of this Report, stated the views entertained by the vendors and consumers with regard to the consumption of the round stuff in a flat ganja-consuming district, and *vice versâ*, and I do not think it will at all be advisable, nor does it at all seem necessary, to suppress altogether the exportation of ganja in its flat shape. This has been proposed by the Board in their letter, No. 398B., of the 7th April 1875, to the address of the Commissioners, under an impression that *chúr* ganja was surreptitiously put inside the bundles of the flat drug; but I beg leave to assure the Member in charge that this is not the case. I shall have occasion to speak on this subject more fully later on.

Weighing the ganja.

105. Flat ganja is sold by the ryots per maund, but this does not mean the *pacca* maund of 40 seers of 80 tolás to the seer, nor the *katchá* maund of the same number of seers, but of 60 tolás to the seer. Four or five twigs of the ganja, or as many as can be held between the thumb and the second finger, enabling the tips of both fingers with a little pressure to meet, are taken to be a bundle. Ten of these bundles are made into one larger bundle, and four of these larger ones are collected together and tied up. The weight of this last in the ganja trade is called one maund. The actual weight of this large bundle varies considerably, and five or six of them make a *pacca* maund.

Sorting of flat ganja after sale by cultivators.

106. These bundles, when sold, are brought to the house of the party who acts as a broker in the transaction, and there opened out and re-arranged into bundles containing from 20 to 28 stalks, and weighing from one and a half to two seers. Inferior ganja in very small twigs is put in first, the longer twigs, from which,

which, with the exception of a portion of the bare stem, no wood has been separated, are placed outside, and the bundles are then made up.

In some places a class of men called fariahs make up the bundles, for which they get paid at the rate of one anna to two annas per each village maund.

Sale of round hemp by field.

107. The round hemp is generally sold either by field at a fixed valuation before manufacture, or at rates to be determined after the completion of the manufacture; the former is called *bhitá kharid*, and the latter *desáshoi*. In either case the agents of the several wholesale goladars belonging to the districts which import the round hemp commence to arrive at the ganja tract in the latter part of January for the purpose of obtaining their year's supply. Each agent is accompanied by five or six men, who act as their assistants. These agents and their subordinates get a salary ranging from 6 rupees to 17 rupees per mensem, besides all *bonâ fide* cost of feed. Most of these men take up their quarters at Nowgong in the house of one Madhusúdan Nandi, who has lived there for the last 17 years, and who earns his livelihood solely by lodging these men, and by writing petitions, forms, &c., for the ganja growers and traders. A few days before the ripening of the hemp crop which is to be prepared into the round ganja the agents go about the ganja fields inspecting and examining the plants ere making their purchase. Some of the goladars generally deal with the same set of cultivators year after year; but many do not do so, and choose the best fields they can get on easy terms. The fields having been selected, those (and their number is small) who purchase the standing crop at a valuation get a few of the old cultivators together and fix a price for the standing crop with reference to the probable yield of flat hemp therefrom, and the price of the same then ruling in the market. Generally speaking, this price remains unaltered to the last, and has to be paid, whatever the quality and the yield of the drug may turn out to be. But should it be found at the close of the manufacturing season that the prices fixed in this way have greatly exceeded the prices paid by others who had their purchases made on the *desashoi* principle, the cultivators, on being appealed to, do not hesitate to take off a few rupees. I know of an instance in which a cultivator thought it proper to take off four annas to the rupee upon the value fixed upon a standing crop.

The dealer who purchases the standing crop on the above system does not weigh his ganja in the place of manufacture.

Sale of round hemp by produce.

108. The preliminaries as regards the purchase of round hemp under the *desashoi* principle are exactly the same as in the first case; but, after selecting their fields of ganja, the agents advance a few rupees, often two to five rupees, per field, and at no time more than 25 per cent. of the amount which the purchasers in their mind think to be the proper value of the crop. No settlement is made about the price to be paid, but an understanding is come to between the sellers and the purchasers that prices will be fixed with reference to the quantity of drug prepared, and to the price thereof prevailing in the market at the time the drug is exported. The simple and ignorant cultivator, fearing lest he may not be able to get another purchaser, or lest he may not be able to prepare the drug himself, yields his consent, and intimates to the supervisor that he has sold the hemp crop standing on his fields to such and such a person. The dealer then harvests the crop and prepares the drug himself.

Each goladar has four or five or more *chators* in all directions of the ganja tract. Each *chator* remains in charge of one of the agent's assistants and two Jessore coolies, who stop day and night in one of the huts built at the place of manufacture. The goladar's men take advantage of their compact with the growers, and cast aside a greater portion of the woody matter than is contemplated in the Board's rules, as also all the plants or branches of the plants from which inferior ganja is expected. The drug prepared by them is, therefore, necessarily better than that prepared by the cultivators themselves.

When the manufacture of the crop purchased under both the systems noted above has been completed, and licenses to retain possession of the drug have been obtained, the goladars or their people send to the warehouses a quantity of

the new ganja. Even then the price is not fixed by the *desashoi* purchasers, but they, as also the purchasers by fields, pay some more money to the ryots; and, making over to them the remaining portion of the drug, start for their respective warehouses with a supply of the new drug. The export of the new drug commences at the latter part of March.

Contracts, how made.

109. No document is taken from or given to the growers, and if, as previously observed, the license be in the purchaser's name, the growers are placed entirely at the mercy of the latter. Those who can afford to pay and are honest in their dealings remove the drug in two or three instalments within six months or so, and one or two take it away and pay up the ryots to the last farthing at the time the last instalment is taken away; but others, from want of means, or from a desire to remove the drug when the market is cheap, or in order to compel the poor cultivator to reduce the price, do not remove the whole of the year's supply within even a twelve-month.

Settlement of rates of *desashoi* contracts, and its disadvantages to the cultivator.

110. In fixing the price of drugs sold on the *desashoi* principle the goladars' agents resort to all kinds of tricks. They buy up one or two of the cultivators, whose standing crops purchased by them have not been so large as those of others, at a low figure by paying them a few rupees extra privately, and then insist upon that figure as the prevailing market rate, and force the other contractors to abide by it. The price thus fixed forms the basis upon which the valuations of the outturn of other fields are made. The price is generally settled whenever the last instalment is exported. A few goladars wait until it is the fag-end of the season, when the market is dull and the prices generally low. It has also happened that a few wholesale dealers, as also the ryots with whom they deal, have suffered from the misconduct of their agents, who, for the sake of their own gain, had prepared a larger quantity of ganja than they could reasonably expect to sell within the time the drug retains its narcotic power, and which they could pay for and remove from the cultivators' houses. Should the licenses have been made out in the names of the growers, they are compelled, late in the season, to seek other buyers, to whom they are obliged to sell at a considerable sacrifice. The expense incurred by the dealers preparing the drug necessarily goes for nothing. If it be not sold, owing to the license being in the purchaser's name, it rots in the ryots' houses, and is ultimately burnt to ashes.

The wholesale dealers also impose upon the ryots in the matter of weighment of the drug. Those who buy at a valuation do not think and have no need of weighing the drug before it is put on the scales in the supervisor's office; but the *desashoi* purchasers weigh a few packages, not the entire quantity, of the round ganja, in order to have an idea of the quantity of drug prepared by them, and with a view to the ultimate settlement of the price, and make the ryots give them 12 *paseris katcha* or 45 *pacca* seers of the narcotic in the maund.

It will thus be seen that a ryot has to suit the convenience of the purchasers in every way, and then to wait for some months before he can expect a return for his labour and capital. In the meantime the drug stored in his house may suffer from the ravages of mice or white ants, or be burnt on the cultivator's house being set on fire, which is not an unfrequent occurrence.

The loss in the latter case falls both upon the ryot and the wholesale ganja dealer; the latter loses the money expended in preparing the narcotic; the former does not get the value of the plants sold by him. Should the license be in the purchaser's name, the grower makes a demand for the price, but he rarely succeeds in getting it.

Round hemp prepared by the cultivators themselves is sold generally for cash, but also occasionally on credit; and I know of an instance in which the poor cultivator had to go to the purchaser's house, hundreds of miles away from Nowgong, for his money, and had to come back with only a portion of the sum owing to him.

111. The

Weight of bundles and packages.

111. The packages or bales of round ganja referred to in paragraph 78 are made by placing the bundles in two rows with their heads meeting each other. The number of bundles put in a package or *bastá* depends upon the size of the bundles. A package is generally supposed to weigh one maund, and contains from 80 to 100 bundles. When brought to the supervisor's office it is, as a rule, found to be less than that weight, and a number of bundles have to be put in in order to make up a standard maund.

A bundle of round ganja weighs from four to six and even eight chhatáks, containing from 80 to 100 twigs, and a few very small ones almost approaching to *chúr*. A large-sized bundle measures about a foot in length, and as much in circumference in the centre. I have seen packages weighing one maund of 40 seers to the tolá containing from 80 to 150 bundles. This year the bundles in the two or three places visited by me have been made smaller, and I fancy the reduction in the size of the bundle will be the rule.

Sale of *chur*.

112. In the Board's Excise Report for 1870–71 the price at which *chúr* ganja is said to have been purchased from the cultivators is given at 25 rupees to 30 rupees; but I have found, on inquiry on the spot, that *chúr* ganja is rarely sold, but given away to the purchaser as his perquisite along with the drug sold, either flat or round. This is one of the reasons which in former days induced the purchasers of the standing crop to make as much *chúr* as they could.

Purchasers of the standing crop on the *desáshoi* system, finding that the *chúr* hemp could be had free of charge, would, in days gone by, make it from all the ill-grown plants which had borne only a blade or two of ganja. They would throw away all other parts except the ganja blades, and utilise them as *chúr;* but the cultivators gradually came to understand the trick played upon them, and for some years past have refused the utilisation of the inferior ganja in this way.

The above is one of the circumstances which accounts for the decrease in the exportation of *chúr*. Another circumstance which is answerable for the falling off is the increase of duty to four rupees per seer from the year 1864–65. The statement which the Collector of Rajshahye has forwarded to the Board through the Commissioner, along with his letter No. 389, of the 24th March last, shows that the export of the *chúr* hemp fell from 85 maunds and 18 seers in 1864–65 to 17 maunds and 13 seers in 1865–66, and since then, with the exception of a couple of years, there has been a steady fall in the exportation of this variety of hemp.

In former days the *chúr* was looked upon in the light of refuse of the *chator*, and all kinds of shifts were resorted to to obtain as large a quantity as was possible. But when the duty was raised to four rupees per seer people adopted measures to prevent the production of *chúr* by manipulating the drug as carefully as possible, and by retaining only the best portion of the fragments that fell during the process of manufacture, and destroying those parts which became mere powder.

Mr. D'Oyly draws the attention of the authorities to the fact that Hooghly suddenly, in 1870-71, stopped taking any *chur*, when it had in 1864-65 imported as much as eight and a half maunds. On inquiry I find that, in consequence of the inferiority of the plants purchased and the indifferent quality of the outturn made by the Hooghly goladars, there has been, in fact, very little *chur* worth taking, and what little dropped off at the time of manipulation turned out to be so poor that the goladar had it burnt on his *chator*. In Calcutta and in Beerbhoom I am aware that the little *chur* that used to be brought was not sold. In the latter place *chur* imported in 1874 had remained unsold in 1877, and, from a statement supplied to me by the Collector of Calcutta, I find that since the year 1872-73 more or less of *chur* hemp has been, year after year, burnt in the warehouses of the goladars.

In former days the Calcutta wholesale dealers used to sell large quantities of the *chur* to the serangs and khalasees of the ships bound for Mauritius.

In 1874 and 1875 the serang of the "Lalla Rookh" and the captain and chief officer of the "Nighthawk" were prosecuted for having in possession a quantity of *chur*, and were, on conviction, heavily fined. Since then the *rora* drug has not found a favourable market either in Calcutta or in the 24 pergunnahs.

It is also a fact that the consumers do not like the *chur* in consequence of its high price and its alleged less narcotic power. It is kept in a loose state inside a gunny bag, and quickly dries up, and loses its intoxicating power sooner than either the flat or the round hemp. This has been conclusively proved by the experiments made by Dr. Macnamara in 1872, in which, while the flat and the round ganja was found to contain 5·8 and 5·0 of *cannabin* respectively, the *chur* contained only 3.9. Mr. D'Oyly, in his No. 15, of the 13th January 1876, to the Commissioner of the Rajshahye Division, expresses it as his opinion that considerable quantities of the leaves that get detached during the process of manufacture are made into *chur*. I admit that a good many leaves do get detached in the way indicated by Mr. D'Oyly; but, from the inquiries I have made, I am satisfied that they are not, and cannot be, made into *chur*. The crowded flowers with bracts alone are converted into ganja, but not the leaves. I admit that a few slender twigs, which formerly would have been made into *chur*, are now put inside the bundles of round ganja; but they are only a few, and are not altogether devoid of the stalk, the absence of which produces *chur*.

Chur also drops from the flat as it does from the round sort, but not at the time of the manufacture. The small blades of flat hemp get detached at the time the bundles are arranged and tied, and at the time it is weighed, pressed, and packed in the office of the supervisor. Should these blades be of an inferior kind, the purchasers suffer them to be burnt; otherwise they are exported. These *churs*, like those of the round drug, do not command so ready a market as the ganja with twigs, and for precisely the same reason. It is a mistake to suppose that round hemp is ever placed inside the bundles of flat ganja; the narcotic power of both being the same, as already remarked, smokers of the flat drug will not consent to smoke the round hemp.

A large quantity of *chur* of both kinds of ganja falls inside the bales when they are tied, pressed, and packed in the supervisor's office, and by rough treatment in transit, when they are thrown upon the ground at the river ghat and at the railway stations, on carts and on boats, as also on the railway wagons.

Brokers.

113. Professional brokers are rarely employed in the purchase and sale of the round hemp. The drug, as already observed, is mostly prepared by and at the expense of the wholesale dealers, and a small quantity only is bought ready made. To facilitate negotiation the wholesale goladars take into their confidence one or two of the cultivators and transact all their business through them, for which they pay them a few rupees over and above the price of their standing crop. In the sale of ready-made drug brokers are employed, and paid a commission of one rupee in the maund, payable by the purchasers. The purchasers stay in their houses and allow them brokerage at the above rate, or at the rate of from one pice to half an anna to the rupee. In case of large and favourable sales the sellers make a present of a few rupees to the broker.

But a broker is essentially necessary in the trade of flat ganja. Not a blade of ganja is purchased without him, and he is the man who of all others derives the largest profit in the business. When a dealer arrives at Nowgong he goes straightway to his broker, and not unoften takes up his lodging in his house, and remains there as his guest until the hour of his departure. The broker then ascertains from him the quantity and quality of the drug he intends to buy, for there are four classes of flat drug; the best is called *aoal*, the second class *doem*, the third *siam*, and the fourth *chaharam*. If the broker has a large business, and there are three or four substantial brokers in the hemp tract whose brokerage comes up to a pretty large figure, he employs one of his professional subordinates, called fariah, to go about in search of the drug. The purchaser, as a rule, does not accompany him, but has an easy time of it in the broker's house. The fariahs generally make the selection, fix the price, and communicate the same to the broker. As a rule, both of them combine together in adding a rupee or eight annas to the maund, flat hemp being always sold in trade maunds described in paragraph 105, four or five of which make one *pacca* maund, and the price is communicated to the would-be purchaser, who, as a rule, consents. The drug is then removed to the broker's place, and there kept till the entire supply has been

been gathered. The drug is then arranged in bundles and brought to the supervisor's office, either on carts, or on pack bullocks, or in boats, for the purpose of being weighed and packed.

The remuneration allowed to a broker of flat ganja varies in different parts of the hemp mahal; a few charge as much as eight annas, some four to six annas, and others two annas, per each ganja maund. In a few transactions the brokerage is charged at the rate of half an anna to the rupee paid on account of the value of the ganja, and in one instance one of the goládárs of Patna and Arrah, who annually imports some 500 maunds of ganja, pays his broker a salary of 100 rupees per annum. Besides this commission, which the *dalúls* divide with the fariahs, who get one-fourth share of it, he pockets the additional price put on the ganja, giving also a share of it to his subordinate. It is not uncommon for either the broker or the fariáh to have his own drug to sell, and upon this, too, he realises his brokerage. All brokers and fariáhs are also growers of ganja, which they, of course, sell to advantage to their constituents, and, besides what they grow themselves, always have on hand a quantity of ganja previously bought by them at cheap rates, and these, too, they dispose of to those who make their purchases through them.

The sellers occasionally pay a moiety of the brokerage, but as a rule the charge is borne by the purchasers. The former, however, make it a point of paying something to the brokers, and thereby keep them attached to their interests; for if a cultivator has ever given offence to them his chance of selling his drug is indeed very remote.

At times the brokers act as agents of the warehouse keepers, with whom they correspond and for whom they make purchases, which they either take down themselves to the dealer's place or send it to him in charge of messengers.

There are about 70 to 80 petty brokers of ganja, and the competition amongst them is so great that, with a view of inducing a wholesale purchaser to buy the hemp through them, they offer a bonus of some 30 to 40 seers on the first year of their transaction with him.

My inquiry in the ganja mahal, and amongst the largest purchasers of flat ganja outside the ganja mahal, leads me to believe that the brokers make four annas out of every rupee that passes through their hands, and they combine with the agents of the wholesale dealers to defraud their principals. Most of the goládárs are well aware of this, and a few of them have been totally ruined through the treachery of their own representatives in the hemp tract. A few of them have begun to go to Nowgong themselves, but many cannot do so, partly owing to their inability to leave the business in their warehouses in the hands of others, and partly on account of the climate of Nowgong, which is generally detested.

It would be a great advantage if the Board's rules were made applicable to the brokers, and they were made to register their names in the Collector's office and obtain licenses therefrom before they are allowed to negotiate for the purchase of the drug.

Agent's commission.

114. In transactions of round ganja the agent gets a commission of eight annas on each maund of ganja made on the *desáshoi* principle, half of which goes to his own pocket and half into the pockets of his assistants. The gomáshtá who buys up the plants at a valuation is also paid a round sum by the cultivators, not exceeding 30 rupees in 100 maunds of ganja. Besides this gain, the agent is allowed one day's wages of every coolie who has worked for 30 days.

Pay of labourers.

115. The pay of a ganja coolie imported from Jessore is six to eight rupees per mensem, exclusive of his charges for diet; the head coolie receives as much as nine rupees and his food. The hire of the local coolies ranges from three to six annas per diem without diet money. The imported labourers stay night and day at the places where the hemp is manufactured, while the local men work from morning to evening. It is noteworthy that the hire of the latter is not fixed until after the completion of the manufacture, when the cultivators and the agents of the goládárs meet and settle it.

Procedure for purchase.

116. The procedure adopted by the wholesale purchaser is as follows: on his arrival at the ganja mahal he presents himself before the supervisor, and, after making over to him the import pass which he obtains from the excise officer or the subdivisional officer of his own place, begs to be furnished with the "anumati patra" (license in Form 31, Section 17, Clause 8, of the Board's rules for the cultivation, &c. of ganja), which the excise officer in Rajshahye forwards to the supervisor on receipt of the duplicate import pass, which is sent to him by post simultaneously with the delivery of the same to the goládár or agent. The supervisor, if the license has been received, compares it with the import pass, and, if it tallies, makes it over to the goladar or his representative, be he an agent or broker of the place. To a broker the import pass is occasionally sent by post. Thus empowered, the purchaser or his agent goes to the interior to make his purchases.

Procedure in the supervisor's office.

117. The purchased drug is then brought to the supervisor's office, but it is not allowed an entry into the godown until two forms, written in Bengalee, are filed in the supervisor's office. One of these forms is from the broker through whom the purchase has been made, and the other from the purchaser himself; and when there is no broker, as is generally the case with round hemp prepared by the wholesale dealers themselves, both the papers come from the purchaser. The ganja is then admitted into an open godown and kept there for a day or two, or until the supervisor is ready to weigh it.

I may here mention that Article I. of the license is never acted up to either by the supervisor or by the wholesale purchaser, and that all ganja purchased by him is not collected in one place, nor does the former fix any such place as enjoined in the license.

No officer of the supervisor's establishment watches the drug in this open place. True, peons are told off to be on the watch in the office, but the whole thing is a sham, and during the time I was encamped at Nowgong I never saw a peon watch the ganja. At night the gomastah or one of his men sometimes comes down to the godown after meals and sleeps there. Of course it does not follow that the ganja so stored is stolen from the supervisor's godown, but there is ample opportunity to do so if there be an inclination in that way.

On the day of measurement the supervisor sends for the coolies who weigh and pack up the hemp. These men are called "ganja paits," and they are told to do the needful with respect to the ganja lying in the godown. They (in all about 21 in number) live in the neighbourhood of Nowgong, and pack and unpack and weigh the drug. In the busy months they get the assistance of extra men to do the work.

Should it be the flat hemp, these people, sometimes by themselves and sometimes in the presence of one of the excise chuprasees, proceed to untie the bundles, and pick out therefrom the smaller twigs which generally happen to be within them. The bundles are then remade, separate bundles being made of the smaller twigs. This done, the men go to take their meals, after which they commence placing the package, generally made of 20 bundles, or 10 on each side, with their tops inside, on the scales in the presence of the supervisor.

Some 23 to 45 bundles, according to their sizes, make a maund, each bundle being about 2½ feet in length and about 2 feet and 10 or 11 inches in circumference, containing about 20 to 30 stalks.

As a rule the bundles of flat ganja brought to the supervisor's office for weighment and packing had hitherto never been opened out and examined; but since September last, on a representation being made from the district of Dinagepore to the effect that a number of smaller twigs of flat hemp had been found in the bales of flat ganja, the Collector of Rajshahye has ordered a searching examination of all the bundles of the flat drug before weighment and dispatch. This order, I am glad to say, has been acted up to, and no less than 254½ maunds of smaller twigs, fit to be assessed with a duty of three rupees per seer, have been, from the 5th of September to the 20th February last, picked out and separately packed from out of 692 maunds and 24 seers of flat hemp brought to the supervisor's office. But I have reason to believe that some of the district officers, in the teeth of the supervisor's label on the bales of ganja, continue to charge only *Rs.* 2.8. upon the smaller twigs. I know for certain that this was done

done at Bhagulpore, and it is said that on this being brought to Mr. Money's notice, the Board's circular No. 4 of December last was issued.

Each bale of flat hemp is tied with four pieces of string in four places. It is then wrapped up in a layer of straw, pressed downwards, and again tied with four pieces of string. It is then packed in gunny-cloth, sewed up, and sealed with the Supervisor's seal.

In the case of the round hemp the ganja coolies only count the bundles inside the bale, and after weighment encase it in a layer of thatching grass, tie it with three pieces of string, press it down, and pack it up in gunny-cloth. The package is then sealed.

Each bale of either kind of ganja is weighed in the Supervisor's presence twice, once before it is packed and again after it is encased in straw or grass and packed in gunny.

A maund of ganja, after being packed and sealed, weighs about 2½ or 2¾ seers more.

All the above processes are gone through by the men, the sealing only being performed by an abkaree peon.

The cost of weighing and packing a maund of round ganja is detailed below:—

	a.	*p.*
Coolies	2	9
Sealing-wax	—	9
Two pieces of gunny	4	6
Thread	—	3
Oil	—	1
Men's food	—	6
Total	8	10

In packing a maund of flat hemp in addition to the above, the cost of a second piece of gunny-cloth is incurred, as also an expenditure of 1½ annas in the maund for the picking out of the smaller twigs and tying them in separate bundles.

The size of a bale of round ganja is 6 feet 6 inches in circumference, being 2 feet in length and 1 foot 11 inches in height; and that of a package of flat drug is 5 feet 7 inches in circumference, 3 feet 7 inches in length, and 1 foot 10 inches in height.

After the last weighment labels are posted on the bales indicating the sort of ganja packed and the rate of duty leviable thereon.

The Supervisor then records on the back of the import pass the particulars of the purchase, and after causing the dealer's boats or carts or bullocks to be searched, he permits them to leave the place with their consignments.

Should the ganja brought to the Supervisor's office be found to be more than the goládár is authorised to buy by his import pass, the quantity found in excess is returned to the seller, if he be present and expresses a wish to take it, or else it is locked up in the Supervisor's godown, where I found a quantity of ganja of all kinds in a damaged state, and I was told that a portion of this had been there since 1873.

I give in the margin a short statement showing the quantity of drug found in excess and retained in the Supervisor's godown since 1869.

	Flat.	Round.	Chúr.
	Mds. s. c.	*Mds. s. c.*	*Mds. s. c.*
1869	2 29 0	—	—
1870	0 26 0	—	—
1871	15 4 0	1 28 0	—
1872	4 28 0	0 8 0	—
1873	14 32 0	—	—
1874	18 15 0	2 0 0	—
1875	3 27 0	1 27 0	—
1876	16 30 0	0 27 2	—

The Supervisor, on being questioned, explained that these had been preserved in the expectation that the wholesale dealers who had paid for them might some day claim them. But the drug, in the condition I saw it, seemed to me to be altogether unmarketable, and after due notice to the owners, should have been long ere this burnt to ashes.

Number of dealers.

118. The number of wholesale dealers who obtained their supplies of ganja from the ganja tract last year was 254; but I have been able to ascertain for a fact that there are some goládárs who do not go Nowgong, but purchase their ganja from some of those who import the drug from the producing districts. The warehouses of Monghyr, Bhagulpore, Patna, and Arrah supply the narcotic to the North-Western Provinces; the Nepalese draw their supply, at least they annually take a quantity of hemp, from the Bhagulpore district, and Calcutta occasionally exports it to Akyab, Trinidad, and, though very rarely, to London.

Selling price of ganja.

119. The prices at which the ganja is bought from the producers, brokers, or fariáhs vary according to the quality of the drug. I have in paragraph 92 estimated the sum expended in preparing a maund of round ganja at Rs. 27-2, and when to this sum is added the expenses of transporting the drug from Nowgong to Calcutta and its neighbouring districts at the rate of Rs. 2-5-6 per maund, the cost of each maund comes to Rs. 29-7-3. I have known of instances in which round ganja has been sold from Rs. 25 to Rs. 45 per maund. Flat hemp is bought and sold by a kind of maund peculiar to itself (*see* paragraph 105), and even that maund is mere guesswork. Its price varies from Rs. 2 to Rs. 6 per each ganja maund, four or five of which make one ordinary maund. But a *pacca* maund of flat hemp sold from Rs. 8 to Rs. 32 in the years 1874-75 and 1875-76.

The price at which the goládárs have been selling the round ganja to the retail vendors in Calcutta during the past four years ranged from Rs. 40 to Rs. 80 per maund, and the selling prices to the consumers ranged from Rs. 249 to Rs. 360 a maund, almost the same prices prevailing in the other zillahs where the round ganja is consumed.

Flat hemp is sold to the retail dealers at a profit of Rs. 10 to Rs. 23 or even Rs. 25 per maund, but to the consumers it is sold at Rs. 180 to Rs. 190 for the same weight.

I may here mention that a wholesale goládár selling the ganja to the retail vendors by driblets loses at least a seer in each maund of flat ganja, inasmuch as a portion of the drug gets pulverised in the process of packing, unpacking, and weighing. In the same way about four to five chhatáks of wood is always unsaleable in a seer of hemp when it is sold by the retail vendors in small quantities to the consumers. In case of the round hemp, the loss in the woody matter in a seer of the narcotic disposed of to the consumers was about three or four chhatáks in former days, when the bundles were larger than they are now; at present it is from one to two chhatáks only. There is scarcely any loss in the sale of the round sort to the retail vendors.

The narcotic portion of ganja, apart from its surrounding worthless matter.

120. With regard to the quantity actually consumed by the smokers, the Collector of Calcutta states that, besides the seeds and woody matter rejected, one-eighth is generally wasted and seven-eighths actually consumed. My own conclusions, based on actual experiments, showed that on five tolás or one chhaták of fresh flat ganja being separated from the superfluous leaves, seeds, and all woody matter, the pure drug as smoked by the consumers weighed two tolás and ten annas, wood one tolá and ten annas, and seeds and leaves ten annas; two annas lost in leaves pulverised and stuck to the cloth upon which the experiment was made.

In the same way, in five tolás of round ganja I found the pure drug as smoked by the ganja smokers, on separation from the seeds, woody matter, and extra leaves, to weigh 2¾ tolás, the wood one tolá and six annas, the leaves and seeds 11½ annas, and leaves reduced to powder and not accounted for 2½ annas.

In a similar way I found in a chhaták of the *chúr* ganja 3½ tolás of pure drug as smoked by the consumers, and 1½ tolás of woody matter, leaves, and seed, which are thrown away.

Judging by the above results, I find that out of 5,941 maunds 12 seers and seven chhatáks of flat hemp, upon which a duty of Rs. 2-8 was actually levied in the year 1875–76, only 3,119 maunds 32 seers 2 chhatáks and 2⅜ tolás were consumed

consumed by the smokers. Of round hemp 746 maunds 20 seers 2 chhatáks and 2¼ tolás were actually consumed out of a total of 1,359 maunds 11 seers and 3 chhatáks, which paid duty at the rate of Rs. 3 per seer. Of chúrs 9 maunds 7 seers and 2 chhatáks were actually used out of 13 maunds 6 seers and 6 chhatáks, upon which the Government due was realised at the rate of Rs. 4 to the seer.

Number of persons smoking ganja, and quantity smoked.

121. As in the case of other intoxicating substances, so in that of ganja, the quantity consumed by different persons varies very greatly, some smoking as much as four ounces, others only forty grains per day. Ordinarily, a smoker takes three chilams (bowls) of twenty grains each or a drachm per diem; a good many poor people can afford or bear only two chilams, and the average may be safely taken at a drachm a day or two chhatáks per month. This gives an average annual consumption of a seer and a half. The total of last year's exports was 8,821-7-5, but taking the average at 9,000 maunds a year, the total of persons who can smoke ganja annually would be 240,000. Practically, however, this is not the case. Out of the total export of 1875-76 only 7,389-12-7 were actually given out to vendors who paid Government duty, the rest remaining unsold. Nor does the quantity sold represent the quantity actually consumed; a portion of it has to be accounted for as wastage, some lost by fire and other accidents, another portion—about one-fourth of the total—rejected as wood, leaf, and seeds by the consumers when preparing the drug for smoking; so the total of consumers cannot be reckoned at more than one hundred and twelve thousand persons in all parts of the world to which Rajshahye ganja is taken. In the Lower Provinces and the North-West the number is probably not more than 80,000.

Unlike Siddhi, charas, and wine, which are taken by many only on particular occasions, ganja is taken every day or not at all; it is nowhere and never looked upon as a holiday stimulant. On the other hand, it should be remembered that the practice is for each smoker to have three whiffs, after which he hands the hookah to his companion, and one bowl in this way suffices for the intoxication of three persons. When no companion is at hand, the bowl is allowed to burn to waste, or, in the case of very poor people, the fire is blown out, and the half-burnt drug reserved for a second use at a subsequent time. Taking these facts into consideration, the actual total of smokers in the Lower Provinces and the North-West should be reckoned at about two lakhs of persons.

As a rule, the hemp is not smoked by the agricultural classes; the artizan class and the syces, sweepers, pálki-bearers (not the Uriya bearers), and a few persons of the middle class, as well as mendicants, make use of the drug. The Bhooteas and the Assamese do not smoke it. The people of the Behar districts use more bháng than ganja. In the Assam districts the comsumption of hemp among the coolies imported from Bengal and Behar is very limited.

Dryage and wastage during storage in warehouses.

122. It is not practicable to give for certain the percentage of loss sustained by the wholesale goládárs on account of dryage and wastage in their warehouses. Ganja is a substance which is peculiarly amenable to atmospheric influences, and its narcotic power loses more or less according to the quality of the drug, the state of the weather, and the length of time it has been kept in the godown. If it has not been properly prepared and well denuded of the larger leaves, or if it has been packed or brought down in a damp state, as is not unoften the case with the drug that comes early to the market, the dryage is greater than when it has been well dryed and cured. The hemp dries up in a westerly breeze, but it gets moist when the breeze blows from the east; and for this reason the bales of round ganja are generally made up on a damp day, when it is blowing from the east. If the hemp be kept in a golá into which the rays of the sun have easy access, the dryage is more than what it would be if stored in a damp, well-closed godown. I have taken the opinion of some of the most intelligent and experienced ganja traders on this point, and I agree with them in thinking that the loss sustained on this account does not on an average exceed one seer in the maund. With regard to the loss by wastage, it varies according to circumstances. The injury done by rats is a serious one; the rats eat the seeds, and, in search for them, cut up and destroy the twigs of ganja. In well-raised and well-

well-ventilated masonry golás, such as I saw at Bankipore, with passages for cats easily to go in and come out, the loss by wastage is indeed very little; but ordinarily the wastage comes up to about two or three seers in the maund.

The proper construction of ganja golás in the consuming districts should be insisted upon, and the buildings should be inspected by the Excise Deputy Collector before they are registered and allowed to be made use of; and if the hemp be carefully looked after and timely sold, the loss on account of dryage and wastage will not exceed two seers in the maund.

The loss on account of dryage in transit from Nowgong to the importing districts is not recognised by the Board's rules, and whatever is found short on weighment on arrival at the place of storage in the importing district is charged with duty, though the Supervisor's seal on the package may have remained unbroken and the package evidently not tampered with.

It was told to me that in the district of Burdwan no allowance was made on account of dryage and wastage in the godown, and in Patna the excise officer stated to me that there was very little wastage in the golas in the sudder sub-division.

The balance of a consignment which does not meet with sale in the course of 15 months to two years, and which loses all its narcotic power, and consequently becomes unsaleable, is looked upon as mere refuse, and is burnt in the presence of an excise officer; but by certain precautions the loss from this source may be considerably reduced.

In the sudder sub-division of Patna not a blade of hemp is allowed to remain unsold in the warehouses, and there is a standing order that so long as the old drug remains in store the new article is not to be sold. Of course I do not hold up this practice as quite fair and legal, but I bring it forward to show that except when, from some cause or other, the drug is not sold within a certain time, and except when it suffers from the attacks of mice or rats, or white-ants, or from being wet through mismanagement and carelessness, the quantity fit for being burnt need not exceed three to four per cent. of the gross weight. I know it matters very little to the State how much is annually consigned to the fire, so long as it does not pass on to the consumers without paying the excise duty; but still it is a source of serious loss to the wholesale purchasers, and may with ordinary precautions be avoided.

In many districts, on the arrival of the new hemp, the old and new articles are mixed up together and sold. This is specially done by those who have their own retail shops.

Ganja retains its narcotic qualities for about a year, after which it begins to deteriorate, and becomes absolutely unsaleable after two years.

Adulteration.

123. From the details above given it will be evident that it is almost impossibe to adulterate the round hemp. Defective manipulation undoubtedly leads to some specimens containing more leaves and seeds than others; but no nefarious attempt is made, nor can be made, to mix with it foreign substances. A little more moisture than necessary is all that can be attempted to add to its weight, and this accounts for the difference noticeable in dryage. Flat ganja admits of a larger quantity of leaves being allowed to remain in the substance of the drug, and this, among other causes, leads to the production of the four different qualities of the drug noticed above (paragraph 113); but this, too, cannot strictly be called adulteration. It is said that in Furreedpore, Chumparun, and in some parts of Assam it is adulterated with wild bhang, but knowing how scrupulously careful ganja smokers are about picking out the leaves before smoking, I am doubtful of the accuracy of this statement. *Chur* ganja admits of greater latitude in adulteration, and it might be that it receives a quantity of powdered leaves; but this is not done to any large extent. None will adulterate a high-priced drug with worthless materials and thereby raise the amount of duty on it, and then sell it at a low price, for *chur* is less valuable in the market than the round drug. Few will buy at a higher price *chur* who can get the pure round hemp at a less cost.

Smuggling.

124. Having thus far described in full detail the different stages in the cultivation and manufacture of ganja, I now come to the subject of smuggling of the drug in the producing tract. *A priori* it may be accepted as an axiom in political economy that the higher the duty the greater

greater the temptation and tendency to smuggling, and no religion, no amount of education, no moral laws have as yet sufficed to overcome them. The strictest enforcement of penal laws may check malpractices, but it cannot put an end to them. That in the case of ganja, in which an article worth 10 to 12 annas per seer is rendered liable to a duty of Rs. 2-8 to 4, there should be a strong temptation and frequent attempts made to defeat the object of the excise laws, is to be expected as a matter of course.

Facts and opinions regarding smuggling.

125. Nor is this *a priori* inference unsupported by the opinion of the officers of Government who have studied the subject and exercised supervision over the excise department. The Honourable Mr. Cockerell, in his memorandum of 1st April 1876, writes that the Supervisor gave him his positive assurance, when interrogated on the point, "that no unregistered ganja had been known to pass into consumption since he (the Supervisor) had been stationed at Nowgong, and a cutcherry established there:" but Mr. Cockerell took the statement to be only "condemnatory of the system." To me the Supervisor admitted that smuggling does take place, but only to a small extent; and estimated the quantity of hemp annually smuggled at about seven maunds only. The growers of the narcotic admit the existence of this malpractice; but as usual with these men, the people of one village shift the blame upon those of another, pointing out to another quarter of the tract, far away from where they themselves reside, as the place where they suspect the evil.

It was told to me that in former years, when the cultivation and sale of ganja were not so much controlled as now, vaishnabs, jogees, and fakirs used to come to Nowgong in large numbers in the ganja season, and would take away on their ponies bags full of ganja. Of course at the present time nothing even approaching the quantity formerly smuggled can be clandestinely given away or clandestinely sold; yet my inquiry leads me to believe that mendicants still continue to visit the ganja mahal, and either induce the females, in the absence of the men of the house, to give them a quantity of the narcotic as an act of charity, or they buy it cheap from the servants, spoilt children of the family who need money, but do not get it from their parents, or from the cultivators themselves. These mendicants not only smoke the drug they supply themselves with in this way, but they sell it to retail vendors in out-of-the-way places.

Some of the zemindars in the part of the country where ganja is grown—notably one of them—are in the habit of giving alms to and feeding mendicants; and I heard when at Nowgong from the Supervisor, from the Sub-Inspector of Police, and from the officiating Assistant Supervisor, as well as from some *vairágis*, that these zemindars have all along been in the habit of making presents of small quantities of ganja to these mendicants. It is strongly suspected that this ganja is procured by making each ryot who grows it give a small portion of the produce of his crop to the zemindars free of charge.

I was also told that cultivators sell the drug by stealth to some of the goládárs people. The Jessore labourers who come to Nowgong in the manufacturing season take away a quantity, and the crew of the boats in which the hemp is removed seize every opportunity of smuggling a few bundles of the narcotic.

The Collector of Bogra has been good enough to furnish me with a statement containing a brief history of 32 cases of the smuggling of ganja adjudicated in his district during the official year 1876–77; but, as stated in paragraph 103, some of these were not in reality cases of smuggling.

In the court of the Magistrate of Howrah several cases have come up from time to time in which parties were implicated in the smuggling of ganja and duly punished. There was a case of smuggling in the month of January last at Dinagepore, and the following cases occurred, to my knowledge, within a short period. In July last, in consequence of a considerable falling off in the excise revenue in Sylhet, the excise officers were endeavouring to find out the cause of the sudden decrease, when, in course of their inquiries, they learnt that two mánjis named Náser and Bain, who had been frequently bringing ganja from Rajshahye in their boats, had smuggled a quantity of the drug and kept it in their houses, which were accordingly searched, and one seer and 14 chhatáks of flat hemp were found there.

In December following, a couple of police constables and a village watchman belonging to thana Manda, in Rajshahye, were, about 9 p.m., on their way to Bálihar, when they saw two persons crossing the field with something on their heads. On their shouting out, the men dropped their loads and ran off. It was then found that they had dropped 36½ *kutcha* seers of flat hemp. The drug was taken possession of by the constables, but the culprits were never traced.

A few days after the above occurrence three men were seized by the police with one seer and a-half of round hemp and sent in for trial. They were subsequently convicted at Beauleah.

In the first week of January last two men were seized with seven tolás of round ganja at the Táherpore Haut. Their defence was that they had received them from a ganja grower, who, however, denied having ever given it to the men, who were found guilty of the offience and punished.

Mr. D'Oyly, in his able and exhaustive report on the smuggling of ganja, says (paragraph 5) "that flat ganja is packed in comparatively large bundles, and is therefore more difficult to smuggle than the round ganja, which is packed in smaller bundles. *Chúr* ganja is more easily smuggled than either of the two other kinds."

He adds (paragraph 7):—"The ganja Supervisor is of opinion that there is no smuggling at all; he says the cultivators can sell all their stock to licensed traders. Why, he asks, should they sell to smugglers? But of course the answer is that they can get a higher price from a smuggler than they can from a licensed trader: what the latter takes will eventually have to pay duty, while what the former takes will not be burdened with duty. The Excise Deputy Collector, Baboo Mohendranath Bose, an old and experienced officer, says that he thinks there is no smuggling, but he gives no good reason beyond this, that so few persons are detected. But the fact that some cases *have been detected* shows that smuggling *does go on*." Baboo Mohendranath Bose's words, as given in his report No. 154, dated 13th June 1876, run thus:—"The existence of smuggling on an organised and extensive scale must not be assumed before facts can be adduced in support. I must observe that, looking to the excise returns of cases for the last three or four years, I find that while heavy seizures of opium were made at the railway terminus at Howrah, at the toll office at Samookpotta, in the Soonderbuns, and the trade registration office at Sahebgunge on the Ganges, and special rewards given to captors, there is not a single seizure of illicit ganja to the extent of a maund at one time, and though I admit that non-seizure of ganja is no indication of the non-existence of smuggling, still it is clear that smuggling is not rampant, and the decrease of exports sufficiently represents a decrease in the consumption."

Mr. D'Oyly supports his opinion regarding the illicit trade in *chúr* ganja with the following remarks:—

"From the annexed Statement A. it will be seen that the annual report of flat ganja of Nowgong has remained tolerably steady for the last 11 years; the export of round ganja has also been tolerably steady, but has been subject to more variation. The export of *chúr* ganja has not only steadily decreased, but has so much decreased that the amount now exported is almost nominal. Is it possible that the consumption of *chúr* ganja can have fallen off to such an extent, from 85 maunds in 1864–65 to about 7 maunds in 1874–75? Is it credible that 7 maunds is sufficient for the whole of Bengal? If the consumption has not fallen off, the loss of revenue in what is smuggled is very great. The revenue on 85 maunds of *chúr* ganja at present rates would be Rs. 13,600, while the revenue on 7 maunds would be Rs. 1,120. If the actual consumption has not fallen off, Government has lost Rs. 12,480 on *chúr* ganja alone, and this is on the supposition that none was smuggled in 1864–65."

This argument is closely to the point; it should be remarked, however, that *chúr* ganja is not separately manufactured for the use of any particular class of consumers, but it is produced in course of manufacturing the flat and the round kinds, and was for a time held to be mere refuse, worth only being burnt or given away as a bonus to the purchaser, as the extra one in the baker's dozen of thirteen to the dozen. When a heavy duty was laid upon it, it was found expedient to avoid as much as possible the production of an article which

was more liable to deterioration than the other kinds, subject to heavier duty and disliked by the consumers. But the question arises, can the manipulation of the round and the flat drugs be so carried on as to reduce the quantity of refuse from 85 maunds in 1864-65 to 3 maunds in 1875-76? Surely in treating a valuable article the men were not so careless as to produce so much refuse where a little attention could so reduce it. The coincidence of the sudden fall in the production of the *chúr* with the date of raising the duty is also very suspicious. Another question also suggests itself: if the small bulk of the *chúr* favours smuggling, cannot the round and the flat drugs be broken, the woody stalks thrown away, and the narcotic flowers, tied up in small bundles, be carried away as easily? The purchasers want the flowers only, and not the stalks, and the saving in every maund so treated would amount to Rs. 100 to Rs. 120. The temptation is certainly very great, and the risk of detection very small; at any rate, not more so than in the case of the *chúr*.

Probability of illicit trade.

126. On the whole it must be admitted, as stated by the Excise Deputy Collector of Rajshahye, that the facts available from the records of the criminal courts to show the extent of smuggling are insufficient, and they cannot support the idea of any extensive fraud. But, on the other hand, the probabilities are all against the theory of limited and trifling fraud. Until very recently there was no check whatever on the cultivation of the drug; any person could take up the cultivation at his own pleasure, and sow and plant to any extent he liked. The license system commenced only last year, and then there was no check as to the extent of land any one undertook to cultivate. No one on behalf of Government surveyed the fields, and there was nothing to prove that the area alleged was really what was under cultivation. The difference between the reported area (2,113 bigás and 2 cottás) last year, and the actual (3,111 bigás 9 cottás) found by measurement (paragraph 36) showed a difference of 998 bigás and 7 cottás, which at average of $4\frac{1}{2}$ maunds of the prepared narcotic to the bigá would amount to a total of 4,491 maunds for the year. Taking the relative proportion of the round to the flat at $\frac{2}{7}$ to $\frac{5}{7}$, the average duty would be Rs. 106-10, and this would amount to an annual loss of revenue to the extent of Rs. 4,78,852-14. There is nothing to show that there has not been a similar disparity between the total of the reported area and the actual under cultivation in former years; on the contrary, the presumption is strong that there was marked disparity. In dealing with an article so highly taxed as ganja, it would be an unwarrantable demand on human credulity to expect that the mere fact of a paucity of detection and conviction would justify the belief that illicit trade in the article was limited; it is not so in the case of many articles much less heavily taxed.

Want of proper supervision.

127. The only safeguard against illicit trade in excisable articles is constant and unwearied vigilance, and that has been wanting in the case of the drug under notice. The Collector of Bogra, in his No. 29 of 14th June 1876 (paragraph 3), says:—"Most of the ganja smuggling is due to the extreme laxity of the supervisor, who never examines the stocks of the cultivators, or endeavours to discover how they account for the deficiencies of weight in their stocks, sometimes amounting to as much as 50 or 60 seers."

Mr. D'Oyly, the collector of Rajshahye, in his No. 384 of 24th March 1876, says:—

"2. When I was at Nowgong last month I noticed among other things that the supervision of ganja cultivation was, as a check against smuggling, of little use. This is owing partly to the neglect of the supervisor and his establishment, but in a great measure to the faulty system.

"3. The supervisor is an old man, and though I believe from all I hear that he is an honest man, he is not by any means active. He has generally done the work connected with the weighing and sealing of packages of ganja at his cutcherry well, but the out-of-door work, the examination of stock in the hands of cultivators, and the ascertaining how much ganja has been prepared each year, has not been so satisfactory. The supervisor has 12 chuprasees, whose duty it is to help the supervisor in these out-door inquiries. In fact, only 10 are so employed, the other two being employed in the office. The late Com-

missioner, Mr. Cockerell, went with me to some of the villages where ganja is grown, and we were shown the way by one of the chuprasees, who, of all the others, was supposed to know the country best. He was frequently at fault, and evidently had not been to these villages very lately. The supervisor himself was ignorant of the fact that round ganja was then being prepared in these villages. When I first arrived, he told me, in answer to my inquiries, that this year about 1,200 bigas only were under cultivation ; but two days later he said the cultivation this year was quite up to the mark, and that 2,000 bigas were under cultivation. It was thus clear that the out-door work was not performed well.

" 4. As regards the faulty system, I would point out that hitherto there has been no check on cultivation. Under the Board's rules prescribed under Section 33, Act XXI. of 1856, no restriction was imposed on the cultivation of the ganja or hemp plant (*see* Rule 2, Section XVII., page 75). The fault has been remedied by the new law (Act II. of 1876). Then, again, the cultivators, when they have cut their plants, and prepared ganja from it, are obliged by Rule 3 to apply to the supervisor for a license to store or retain possession of it before they sell any of it. It is a remarkable fact that though the Board's rules lay down that a cultivator must apply for a license when the produce has been gathered, and before effecting any sales, still there is no punishment for storing without a license ; provided he did not sell, he might store and retain without a license for months, and this, of course, leaves the door open for smuggling. The licenses granted are in Form 29, Appendix A., page 100, Board's rules. A glance at this will show that the quantity to be retained is estimated. It is estimated chiefly from the number of bundles made, and from this information the supervisor relies almost entirely on what the ryots say. It is clear that he cannot test all their statements at once. There are generally 2,000 bigas under cultivation in different villages. All the ganja is manufactured about the same time, and so a large number of ryots come in about the same time for their licenses to retain what has been prepared. Now, even if the supervisor was to visit each khullian, to test the statement of the ryots before granting their licenses, there is nothing to prevent the concealment of a portion of what has been prepared, or to prevent some of it being taken away secretly at night, before the supervisor or his chuprasees visit the khullian. If the ryot has stored the prepared produce, the supervisor can examine ' the store,' he cannot search the several houses of the cultivator ; and if he examine the store, he can only make an estimate of the weight, and count the bundles. But even supposing that he weighed the stock and found that a cultivator who had a license to store 400 bundles of an estimated weight of 10 maunds actually had in store 400 bundles weighing 15 maunds, the cultivator could not be punished. The law exempts him from punishment for retaining possession of ganja, and the weight entered in the license is only an estimate.

" As a fact, however, the supervisor does not weigh the bundles, so that a cultivator who has a license for 10 maunds, but who has in reality 15 maunds in store, can dispose of his stock, accounting only for 10 maunds. The river Jabuna runs through the ganja tracts; it is navigable all the year, and smugglers have every opportunity for taking away ganja of any description with very little risk of detection."

Baboo Mahendranath Bose, Deputy Collector in charge, Excise, Rajshahye, in his No. 75 of 9th May 1876, observes :—

" 6. The rules for the cultivation of ganja, which contemplated that goládárs would take off the the stock from the hands of the cultivators after the harvest is gathered, have not been carried out, and the storing of ganja in small huts without doors is not safe, nor affords the security of Government revenue which I could wish. It has been frequently noticed and commented upon, and it is not therefore surprising that small quantities of the drug are now and then seized in possession of mendicants or *bairágis*. The cultivation of ganja under a license would not improve matters unless the conditions under which the drug is stored are considerably modified."

From my own experience of the working of the supervisor's department, and of the system under which ganja is cultivated and manufactured, I can bear testimony to the accuracy of every remark quoted above. The supervision is extremely lax, and not at all of a character calculated to prevent smuggling

to

to any extent the cultivators may choose to indulge in. I have to add that the opportunities for smuggling are offered more frequently by the present system of storage after manufacture and before sale, than by any want of vigilance before and during manufacture. The supervisor has knowledge only of the quantity of the drug that is brought to him for weighment, and for which he issues a pass, but no opportunity of knowing anything of the actual quantity stored in the huts of the cultivators. The licenses, too, are issued on estimates, and not after actual weighment of every bale; and there is very little to show what goes out of the cultivators' huts without his knowledge. There is no patrol to visit the huts or watch the incomings and outgoings of boats by the Jabuna. Even of the quantity reported a good portion might disappear without any let or hindrance. Fires are frequent, and reports frequently sent in of quantities of the drug having been destroyed thereby. An open shed or a cowhouse where ganja is stored (*vide* paragraph 81) is of little value. Ten rupees suffice to replace one, and yet a couple of bales burnt in it is equal to a duty of over Rs. 212. There is nothing to prevent the removal and sale of the drug and the subsequent firing of the hut to cover the nefarious transaction. Every such transaction would amount to a clear gain of nearly Rs. 200. The temptation at any rate for such wicked transactions is too strong, and it would amount to stupid credulity to suppose that they are not indulged in. Then there is always lying in the cultivators' huts a large quantity of unsold deteriorated drug of former years, which should have been long since destroyed, but which stand as covers for fresh drugs illicitly sold. The total quantity of this old refuse amounts to no less than 8,264 maunds. Without offence to human morality, it would not be too much to say that they must have done duty of covers hundreds of times to protect the cultivators from the clutches of the excise law, and from deserved punishment for illicit trade.

What precautions necessary.

128. The defects above set forth show that to prevent smuggling there should, in the first place, be a reliable record of the area annually cultivated; in the second place, there should be such supervision during the time of manufacture as to prevent the possibility of the removal of the manufactured drug from the field without the knowledge of the supervisor; and in the third place, such a system of storage as should afford no opportunity to illicit sale.

Scheme of supervision.

129. To meet the first two objects I would strongly support the recommendation of Mr. D'Oyly to bring the whole ganja tract within the jurisdiction of a single magistracy, so that there may not be any divided responsibility. The small tracts in Bogra and Dinagepore, where ganja is now manufactured in those districts, added to Rajshahye, would not swell the size of the latter to any great extent, and Mr. D'Oyly thinks he could easily manage the business of the entire tract. I would also support the recommendation of the Honourable Mr. Cockerell, that Nowgong should be made the head-quarters of a sub-division and placed in charge of an experienced deputy collector familiar with the wants and wishes of the cultivators, and having such sympathy for them as to bring him into their confidence. The supervisor should be placed immediately under him, and his pay increased to Rs. 200. Under the supervisor there should be three assistants, each on a salary of Rs. 80, with a horse allowance of Rs. 20. The supervisor should have an establishment of two mohurrirs and six chuprasees. The assistants should have each a mohurrir on Rs. 20, and two peons on Rs. 6 each. The total cost of this establishment will amount to Rs. 8,232, as follows:—

	Rs.
1 Supervisor	200
3 Assistants at Rs. 80, plus Rs. 20 horse allowance	300
Head Mohurrir of Supervisor	30
1 Assistant Mohurrir for Supervisor	20
3 Mohurrirs of Assistant Supervisors at Rs. 20 each	60
1 Supervisor's head peon	10
5 other peons at Rs. 6 each	30
6 Peons for Assistant Supervisors at Rs. 6 each	36
Per mensem	686
Or per annum	8,232

The present establishment costs 2,280 rupees per year, as shown in the memorandum on the margin, and the increase therefore will be 5,952 rupees. The means for providing this increased expenditure I shall point out below.

	Rs.
1 Supervisor	100
Head Mohurrir	20
1 Assistant Mohurrir	10
12 Peons	60
	190

130. The duties of the supervisor will remain very much the same as heretofore, but he will be required to inspect the fields much more frequently. The three assistants should be located at three different outposts, each centrically situated for the area for which it is designed. The places most suited for the purpose are Itághátá, Murádpur Bálubhora, and Hápuniá. The supervisor and his assistants will have at an average about 800 bigas, spread over an area of about 16 miles, to supervise, and as the lands for cultivation of hemp are selected months before the date of transplantation, they will find no difficulty from June to September to measure every inch of the fields proposed to be devoted to hemp, and submit a report to the collectorate. After transplantation it will be their duty to visit the fields from time to time to see how the cultivation is progressing, and submit progress reports. In December and January they should prepare an estimate of the probable yield of each field. The work during the manufacturing season will be heavy; it will then be their duty to visit the chátors frequently, to take note of the quantity daily manufactured, and to see that the produce is regularly and promptly forwarded to the store-houses. If the work here sketched out be intelligently and diligently performed, there will be no opportunity given for the surreptitious removal of any material portion of the drug from the place of manufacture, and the higher authorities will always have before them full information to enable them to check malpractices of every kind.

Duties of the supervisor and his assistants.

The work should in every case be done by the assistant supervisors themselves, and no opportunity should be given to peons and underlings to harass and annoy the cultivators. Mr. D'Oyly suggests the propriety of quartering police peons on every *chátor* during the manufacturing season, and if we could rely on the honesty and fidelity of the peons so quartered, it would doubtlessly be the best and most complete check possible to the surreptitious removal of ganja from the manufacturing grounds; but I am afraid that in ninety-eight cases out of every hundred the result will be utterly useless. Every maund of ganja privately removed would be equal to a gain of a hundred rupees, and there are few police peons who would not, when there is no risk of detection, yield to a gratuity of two to five rupees. The total number of *chátors* or manufacturing yards last year was 1,585; divided between four officers these would give 396 to each, and as these latter will all be found within an area of 16 miles, it will be easy for a mounted officer to visit them once every fifth day; and I think these visits will prove much more effectual in checking smuggling than the constant presence of a peon.

131. To prevent smuggling from the houses of the cultivators, Mr. D'Oyly recommends a guard boat in the Jabuna, constant inspection of the houses of the cultivators by excise officers, and a preventive station at Sahebgunge on the Atraie river. I do not, however, think that they will prove of much use in preventing smuggling, unless supplemented by a cordon of patrols all round the Ganja Mahal; and even then they will not suffice to put down the evil effectually. The cost will be immense, and the good problematical. To depend upon a cordon of peons when there is no means of detecting neglect on the part of those peons, and where the means and opportunities of peculation on the part of the cultivators, dealers, and peons are so numerous, would be to depend on a broken reed. The best, the most convenient, and the most advantageous plan appears to me to be the absolute prohibition of private storage and the establishment of public godowns where the drug may be warehoused in bond. The highest number of one-maund bales for which provision has to be made in any one year is 9,000; each of these at an average covers a space of about 2 feet 6 inches; but to provide space for passage, ventilation, and partitions for separate stores, I reckon the area at 5 feet per bale, or a total of 45,000 square feet. Bales, however, can be ranged one over another, and accepting three layers as the ordinary mode of ranging bales, an

Bonding golas.

an area of 15,000 square feet would fully suffice. In the ordinary course of business all the bales do not come in at the same time; some go out while others are dropping in; but as the manufacture is completed all at about the same time, and my scheme contemplates that every bale completed should be brought in at once, I do not make any allowance for outgoings. A godown 125 feet by 20 feet would cover 2,500 feet, and six such would provide the required extent of space. Built of corrugated-iron walls and roofs, or kutcha-pucka walls and pantile roofs, with a good pucka floor, each of these godowns would not cost more than 5,000 rupees, and the six a total of 30,000 rupees. If built of corrugated iron, the walls and the roofs will have to be lined with *darmá* mats, to prevent the heated metal drying up and injuring the drug during the hot weather. Three of these should be at the sudder station of Nowgong and the other three at the three outposts, and to these the cultivators or license-holders should be required to bring in the manufactured drug in dribblets as soon as every bale is ready for removal, and there kept in bond until sold. Once under the lock and key of the supervisor, the drug cannot be removed without his sanction, and no inquisitorial visits, guards, patrols or watch of any kind will be required, and the possibility of smuggling will be reduced to a minimum. Loss by fire and theft would be simply impossible. The first outlay will be large, but by no means such as to be too much for so important an object as the prevention of an evil which at present entails a loss of excise revenue to the extent of from one to two lakhs of rupees every year.

Besides, the bonding need not be gratuitous. I think a charge by way of rent of a rupee per bale for any period under one month, and four annas additional per bale for every subsequent month or part of a month, would be light, and readily paid for the security and safety of the goods; under no circumstances can it be felt as a hardship. As the sales are spread over the whole year, this rent would produce at an average of 1 rupee and 12 annas per bale a revenue of 15,750 rupees, or over one-half of the total outlay. The interest on 30,000 rupees at 4 per cent. is 1,200 rupees, and the increased expenditure suggested under the head of establishment (paragraph 129) is 5,952 rupees; adding thereto a sum of 1,000 rupees for repairs and sinking fund, to provide against the deterioration of the six godowns in course of time, the total expenditure will amount to 8,152 rupees, leaving a balance of 7,598 rupees per annum as clear gain. I venture to hope therefore that the scheme will meet with the approbation of the Member-in-charge. If this be adopted, most of the precautions suggested by Mr. D'Oyly will be redundant; I need not therefore discuss their advantages and disadvantages at length.

Present Supervisor and his Establishment.

132. The supervisor, though elderly, is not an old man, but he is known to be honest; and having been for nearly 18 years at Nowgong, is well acquainted with every nook and corner of the Ganja Mahal, and the ryots look up to him, and he exercises great influence over them. If, as it is proposed, the hemp cultivation should henceforward be more effectually controlled, and a new scheme introduced without causing any irritation amongst the ganja tenantry, I would recommend the retention of the present supervisor's services for at least two years. The cultivators in a body seek his advice, and without him, and with greater interference with them than was ever before attempted, there is every fear of the work being seriously disturbed. With three outposts in charge of competent officers the supervisor's work will be greatly reduced, and there need therefore be no apprehehension of failure on his part. At present the means he has to work with is totally inadequate for the end in view, and he should not be visited with punishment for the shortcomings of his department.

The head mohurrir, who does all the supervisor's work in his absence, at present draws a salary of 20 rupees per mensem, and the second clerk only 10 rupees. These men, it is superfluous for me to say, are placed in the midst of great temptations, and the cultivators of the ganja and the brokers, as well as the goládárs, are all at their mercy. They work hard, and I would respectfully suggest that the pay of the head mohurrir be raised from 20 rupees to 30 rupees, and that of the second mohurrir from 10 rupees to 20 rupees.

Duty: its effect on morality.

133. The question of duty on a narcotic substance has to be viewed from two different standpoints: first, with reference to its effects on society; and second, with reference to revenue. There

can be no question that the use of narcotics for the purpose of intoxication is, and must always be, hurtful to society; and the idea is that the more it is restricted by heavy duty, the better for the well-being of the community. I do not share the idea; I think the repressive power wanted is a moral and not a financial or a penal one. Admitting, however, the correctness of the theory for the sake of argument, it has to be borne in mind that there is a limit beyond which restrictive duty fails to be effectual, and the object of repression is defeated. Duty and smuggling move hand in hand; with increase of duty smuggling becomes more rife, and it cannot be put down. A remarkable instance of this is afforded by the Maine law for the suppression of the vice of drunkenness. Notwithstanding its most stringent provisions, the law has proved simply abortive, and no one at a hotel in Maine is under any difficulty in getting as much spirituous drink as he chooses to call for. As regards ganja, the case is, however, different. It is grown on a single small tract in the corners of three adjacent districts, and requires a course of cultivation and manipulation which cannot possibly be carried on in private; and if the use of the drug be, as no doubt it is, hurtful to man, it could easily be suppressed altogether. No ryot in Rajshahye could grow it without a license, and there is no other place in India or out of it whence it could be easily smuggled to such an extent as to supply the place of the Rajshahye drug. The quantity grown in the tributary mahals of Orissa is extremely limited; only 77 maunds were imported from it into Pooree, Cuttack, and Balasore in 1875–76, and it would take several years before the cultivation could be so pushed on there as to replace the 9,000 maunds, or any great portion of it, required in the districts of Bengal. In the meantime the two lakhs of people who smoke the drug will have given it up, and there will be no demand for it. So, for the sake of humanity, the most convenient course would be to prohibit the cultivation altogether, and not to repress it by a high rate of duty which, unless it becomes prohibitive, produces no appreciable effect. Ganja does not produce in its consumers that hankering for the drug which opium does, and the amount of injury to the smokers when deprived of it cannot be great. The sanitary records of the Indian gaols do not show that convicts accustomed to the drug have suffered in any way by being deprived of it. I am of opinion, however, that no moral gain whatever will be effected by the total suppression of ganja. There is a longing for intoxicating substances in human nature which nothing can eradicate, and those who will be obliged to forego ganja on account of high duty will replace it by bhang, charas, daturá, arrack, and other stuffs infinitely more hurtful both to them and to society at large. Confirmed ganja smokers, though lost to society, are as a rule inoffensive to their neighbours, and do not form the most criminal portion of the population. An equal number of drunkards would be a positive pest to society. The idea of subserving the cause of temperance by raising the duty on ganja may therefore be dismissed as chimerical. I hold, too, that it is not just to deprive any portion of the community of any of their comforts, conveniences, or enjoyments for the sake of others, so long as the said others are not in any way injured by them. To quote the language of the Member-in-charge, used with reference to the memorials some time ago submitted by certain temperance societies of Calcutta, —"The fact that 600 men in a village prefer to drink water is no sufficient reason for debarring the remaining 200 from obtaining some other drink if they wish it. It would be questionable how far it would be right to set up such a tyranny of majorities." And what is true of spirits is equally so of ganja. If some people like spirits, it is no reason why others should not be allowed their ganja or charas. Mr. Money has already very justly said that no "further measures are now necessary to restrict or repress the consumption of the drug, as in that case smuggling would increase, and a large number of people, who are moderate consumers, would be denied the benefit they derive from the drug, and would be driven to equally deleterious preparations of bhang, which grows wild in many districts of Bengal. The public revenue would also suffer immensely, and no corresponding advantage would be gained."

Duty as a source of revenue.

134. As a question of revenue, the duty on ganja has to be regulated with reference to the value of other narcotics, the resources of those who use the drug, the habits, customs, and social feeling of the community among which it is used, and a variety of other circumstances

circumstances which bear upon the subject. It has been already stated (paragraph 121) that the class of men who use ganja belongs to the lowest stratum of society; the men are mostly poor, and resort to the drug chiefly because they cannot afford more costly stuffs, and do not choose to betake to the use of the cheaper, but more hurtful, drugs like daturá, arrack drugged with coculus, &c. To raise the duty so as to place ganja beyond their reach would be to drive them to the cheaper and more hurtful stuffs, and thereby to reduce the income from ganja. This is a consummation which is not at all desirable; it would neither subserve the cause of morality nor of revenue.

Duty, how far it may be safely raised.

135. Bearing this in mind, and also the fact that the raising of duty on *chúr* to four rupees per seer has reduced the consumption from 85 maunds 17 seers, valued at 13,668 rupees, in 1864–65, to 3 maunds and 25 seers, valued at 580 rupees, in 1875–76, showing a loss of revenue to the amount of 13,088 rupees per annum, I am of opinion that the present rate is as high as the drug can bear. It is true that the raising of the rate on flat ganja from two rupees to 2–8 rupees in 1872–73, and on round ganja from two rupees to three rupees in 1864–65, has effected a slight increase in revenue, while decreasing the consumption of the drugs; but the great increase in the consumption of other intoxicating stuffs of late years shows that morally there has been no gain, and that most probably those who have foregone ganja have taken to other substances. In 1875–76 the total amount of duty on ganja came up to 11,20,349 rupees; adding this to 1,93,233–15, as the cost of 7,389 maunds 8 seers and 7 chhatáks of the drug on which the duty was raised at an average selling price of 25 rupees per maund, and 48,308–8 rupees for all charges of transit, wastage, loss, interest on capital, and other outgoings, at an average of 25 per cent. on the cost of the drug, the grand total would be 13,61,891–7. This divided among the two lakhs consumers would give an average of 6–12–5 rupees per maund per annum. The income of the class of men who consume ganja cannot amount to more than six rupees per mensem, and the amount they pay for their luxury is already enormous. I apprehend, therefore, that the highest limit has been nearly reached, and any excessive addition to the rate will lead to loss, as in the case of *chúr*. Dealing, however, with a large number of persons inveterately attached to the drug, and determined to forego many of the necessaries of life for the sake of it, I think a slight increase might be attempted without any risk of loss, though it will for certain lead to further suffering among the class who indulge in the drug, for they are sure to use the drug by putting themselves and their families to privations in other respects. Four annas per seer, I think, will not be felt, but eight annas would be the highest that can be safely ventured upon; anything above that would most likely lead to loss. As regards *chúr*, I would respectfully suggest that the rate be equalized with that of the round drug. It is true that it contains less woody and more narcotic matter than the round drug, but at the same time it is not liked by smokers; it dries up and deteriorates much faster, thereby entailing heavy loss to the dealers, and its advantages therefore are fully covered by its defects. The loss by the reduction would be a mere trifle.

Equalisation of duty.

136. A proposition is now under consideration as to the propriety of equalizing the duty on the three sorts of ganja, with a view to prevent the insertion of small twigs, containing very little woody matter, within the bundles of flat ganja, whereby the Government is defrauded, and to simplify the keeping of accounts. These advantages are, however, on the whole not of much importance, and at the same time the plan is open to a serious objection. It would be a positive injustice to the consumers if the same rate be charged for both inferior and superior articles. It should be borne in mind that in the first place round hemp, as a rule, is made from only the best plants, and only those parts of the plants are appropriated to it which have borne the crowded flowers well—a practice which is scarcely followed in the manufacture of flat hemp. Then, with the exception of a portion of the bare stem and the branches which have not absolutely borne any cluster of flowers, no other part of the plant is rejected in making the flat drug. Such is not the case with the round ganja, which consists of only slender twigs. In short, the plants, which yield 5 maunds and 16 seers of flat ganja, produce only 3 maunds and 38 seers of the round-shaped drug. In the official

year 1864–65 the duty on the round ganja was raised from two rupees to three rupees per seer. The supervisor's books show that before that time the bundles were much larger, and consequently contained much more woody matter than now. They were then about 1½ to 2 feet in length, and 40 to 50 or 55 bundles made up a maund. Since then the size of the bundle has been reduced year after year and a greater proportion of the stalks rejected. The bundles are now only one foot in length, and in the majority of cases more than 100 of these make a maund; so that the gain has not been so substantial as is apt to be supposed. The relation between the two drugs is about four to five, and the consumer of the cheaper article cannot but complain if he be made to pay the same duty which the consumer of the more highly valued drug does. In the case of rum, the duty is regulated by the quantity of spirit contained in it, and the principle on which the duty is regulated there should also apply to ganja.

The collector of Rajshahye is for a uniform rate, on the ground that the narcotic power of both the sorts is one and the same. This may be, but as the Member-in-charge is well aware, the importers of flat ganja get much more wood with the drug than the wholesale purchasers of round hemp do, and a uniform rate of duty would be unfair to the former. It may be argued that the importers will be at liberty to reduce the bulk of the wood with the increase of the duty; but unless portions of the main stalk and the twigs on it are kept intact and pressed one upon the other in the bundle, the resinous matter dries up in a very short time and the narcotic loses its power; the goládárs will not therefore find it to their advantage to separate the small twigs from the main stalks in the case of good and well-grown plants.

137. The last subject I have to notice is the propriety of levying the duty on ganja at Nowgong, instead of the present practice of levying it in the consuming districts. Mr. Money recommends this method with a view to restrict the use of ganja, at the same time to save the Government "from a great deal of cheating" sheltered under the head of dryage and wastage. It appears that ere this proposal was definitely made and placed before Government the opinion of the local officers had been invited, and it appears from paragraph 14 of the Member-in-charge's minute that "there is a great diversity of opinion among local officers as to the introduction of the system proposed;" and the case of the North-Western Provinces is cited, where the dealer pays the duty when he purchases his supply either at Nowgong or in the districts of Behar.

Duty, where to be paid.

With all deference to the opinion of the Board, I beg leave to submit that the system proposed will, all circumstances being taken into consideration, neither effectually reform the old ganja smoker, and keep him away from the use of some kind of stimulant or other, nor tend to the increase of the Government revenue. I do not think that the Government is cheated under the cloak of dryage and wastage, both of which the Member-in-charge admits "do unquestionably take place," and the non-receipt of duty on that which is wasted is no positive loss.

The system of levying the duty when the narcotic is sold to the retail dealers has been in vogue from a very long time, and up to this moment I am not aware of any fraud having been perpetrated by the wholesale warehouse keepers which can go to show that short weight, in reality caused by a quantity of the drug being surreptitiously sold, is accounted for under the head of dryage and wastage. At least no such fact has been brought forward in the lucid minute in which the proposal has been made.

Under the present system the wholesale goládár, though master of the drug, does not and cannot exercise the rights of a master over it. From the time it is brought to the Supervisor's office it is packed up and sealed in the way which seems best to that officer, and on arrival of the consignment at his godown, he is held responsible if the impression of the Supervisor's seal on the bale looks suspicious, or the bale is otherwise tampered with. Whenever there is any reduction in the weight of the bales, he is at first made to pay duty upon the dryage in transit, and then allowed to remove the drug to the bond godowns, where it is kept under double lock and key. In fact, it practically remains in the custody of the excise darogah, whose convenience the wholesale dealer has to consult when he has occasion to take out the drug. If, then, in the custody

of

of our own excise officer (the key of the registered warehouse is in some places kept by the Deputy Collector) the narcotic loses much by dryage and wastage, how can the wholesale dealer be accused of cheating the Government? It may be said that the abkaree darogah cannot always be depended upon. This recoils on the Government officers concerned, and does not criminate the dealer, and the remedy should be looked for in other quarters than the dealer. If there be any suspicion, let the joint custodian of the ganja be the Deputy Collector in the sudder stations and at the head-quarters of the sub-divisions, or the Sub-Deputy Collector, and let no warehouses be allowed anywhere else; let better golás be constructed, and let the joint custodians of the drug be enjoined to be a little more merciful to the wholesale dealer than the excise darogah is generally said to be; as I have come to know in the course of my inquiry that, in consequence of his unwillingness, the goládár cannot look after his ganja as often as it is necessary in order to save it from the ravages of white ants. I have already, in paragraph 122, shown that in the sudder sub division of Patna there is scarcely any loss by wastage. What I would respectfully urge is that the trial be made at first to improve the existing system, and then, if it fail to secure the desired end, recourse may be had to some such measure as that proposed by the Board. I say this because I apprehend the change proposed will seriously interfere with the trade and lead to loss.

The ganja trade is confined to men who have inherited it from their forefathers. A good many of these work with their own capital, though they are not wealthy men, and having learnt no other trade from their infancy, they cannot venture to launch their small capital in some other enterprize.

They have not the means to lay out the whole amount of duty all at once. I have already mentioned in paragraph 102 that most of the wholesale dealers, for want of funds, buy the hemp at Nowgong on credit. Will these men be able to pay in advance the duty upon so much even as 20 maunds of drug, which, I believe, is the smallest quantity imported by goládárs living at some distance from the place of exportation? They cannot, and consequently they will be driven out of the field. The Member-in-charge is well aware of this: he observes,—"There is no doubt that the changes I propose will be attended at first with a heavy loss of revenue; a number of the present dealers, men of no capital, will be thrown out of the trade." Again, "it will certainly take time before the revenue will be able to reach again its present figure of 10,98 093 rupees. The price to the consumer will be raised owing to the greater cost to the wholesale dealer, who, paying duty when buying, must charge the interest of that amount to the retail dealer. The usual result of enhanced price, diminished consumption, must follow." He expects, however, that "the thing will finally adjust itself; for as long as there is a demand for an article, people will be found to supply it." It should be borne in mind, however, that the trade is not a popular or a respectable one: native society looks upon the trade with disfavour, and the traders are looked upon as low people, and capitalists will be very shy to take up a trade which will lower them in the estimation of their countrymen. The trade, too, is surrounded by many difficulties, embarrassments, and trouble. The risk is also great.

The busiest season for the export of new ganja is from April to June and July, and a greater portion of it is removed in boats. The weather at that time is very squally, and the ganja boats are never insured. As the boats are well loaded, the sinking of a single boat leads to serious loss, and instances are not wanting to show that boats now and then do sink on their way to the importing district. Kristo Mohun Shaw, an old wholesale dealer of Beerbhoom, told me when I was there in January last that he had some time ago lost about 100 maunds of ganja by his boat sinking in the Jabuna. In the same way, some ten years ago, Samírúdín Mollah, a goládár of Monghyr, lost 25 maunds; and some eight years ago, one Khajey Mandal had to suffer a loss of about 40 maunds of hemp. I have also been informed of an instance in which a quantity of hemp was lost from the railway station of Synthia.

The auction system, under which no one can be sure of securing a shop for the retail vend of the drug, is another serious difficulty in the way of lucrative trade. The Member-in-charge, I think, is aware that unless the importer of Rajshahye ganja has a few retail shops of his own, or can secure the patronage of a number of such shops held by others, the chances are that he cannot sell much of what he has imported; and I need hardly point out the great

uncertainty and difficulty which now-a-days exist in securing a shop for the retail sale of ganja. Those wholesale dealers who have no retail shops of their own induce those who have them, but who have no registered warehouses, to patronize them by selling on credit, the importer paying the duty in advance. Some of the best goládárs have as many as 20 shops which are supplied in this way. This kind of transaction not unoften ends in loss to the former. To large capitalists and men of respectability, the task of securing the patronage of low vendors cannot but prove offensive, and the inducement offered not being such as to overcome this feeling of repugnance, there must be for a long time to come a want of capitalists and consequent dulness of trade.

It is true that in the North-Western Provinces the farmers of the drug mahal pay down the duty on removing the article from the Behar districts, from which they draw their supplies. Some of the farmers are the goládárs of Patna, Buxar, and Arrah, and a few have their own golás at Buxar, from which they take away the ganja only in small quantities; but the total quantity taken is so small that this practice cannot be appealed to in support of the proposal to subject the whole trade to that system.

It is well known to the Board that there are not many goládárs who can manage to effect a sale of their entire stock. Ganja is a perishable article, and that which cannot be sold within a reasonable time has to be reduced to ashes; and will it be fair to levy duty upon this quantity also? It is said by some that the wholesale dealers have no business to import more drug than they can sell; but they have not the means to know beforehand the exact quantity they will be able to dispose of. One has say five shops when he imports a quantity of drug, but he loses them at the next settlement, and he thereby loses the chief means of selling his ganja. The goládárs pay a good price for the ganja they buy, and incur heavy expenses in removing it from the producing district, and naturally enough they try their utmost to effect a sale of it, but are not in all cases successful.

Taking all these circumstances into consideration, and bearing in mind the loss of revenue which will be incurred for certain for some time to come, I am respectfully of opinion that it is not desirable to adopt the proposed scheme, for the present at least. The measures suggested above will naturally cause much consternation among the cultivators, and it is not at all advisable to add thereto a scheme which will so materially interfere with the ready sale of the drug. Annoyance and vexation may be borne, but positive loss will for certain be resented. Many will give up the cultivation of the drug and betake themselves to other occupations, and the trade will sustain a shock from which it will find great difficulty to recover. Vexatious meddling closed the cultivation of the drug in Jessore, and there is nothing to show that similar consequences might not follow from the same cause in Rajshahye. The measures I have suggested will produce an immediate increase of revenue to the extent of from ninety thousand to one lakh and eighty thousand rupees, according as the duty is raised by four or eight annas, and it will remove all inquisitorial domiciliary visits and vexatious interference. The trade therefore cannot but prosper, and I humbly think that reforms in the system of cultivation of, and trade in ganja should, for the present, at least, stop there. At any rate, the question lies between positive and immediate gain on the one side and positive and immediate loss, with problematical prospective gain, on the other, and it is for the Member-in-charge to decide which should be adopted.

Duty on bhang.

138. While on the subject of duty on ganja, I beg to observe that a large quantity of the so-called wild bhang, which grows in almost every district of Bengal and Behar, is consumed by the people of those places; but, with the exception of Calcutta, where a fixed duty of four annas on the seer is levied, the shops elsewhere pay a very small sum by way of license fee, and under it they are at liberty to sell any quantity of the narcotic they can manage. From one district alone, 26 miles from Monghyr, no less than 1,721 maunds were exported in 1873; in 1874 the quantity rose to 2,824 maunds; in 1875 it was 2,326 maunds; and in 1876 the quantity exported weighed 2,265 maunds. Bhang is also exported from Bhagulpore, but I am not aware of the quantity annually taken away therefrom.

The wild bhang grows in the month of Kartik, and is cut in that of Chait; it is then dried, and the leaves are separated from the stalk by threshing. The shopkeepers employ labourers to cut the bhang from the cultivators' fields, and after

after it is prepared, store it in their shops. Whenever any licensed vendor arrives from another district provided with pass, he is at once supplied with the drug.

I would propose that a duty of four annas on the seer be levied in all the districts of Bengal and Behar, in addition to what is paid by way of license fee.

The information before me shows that the wild bhang and ganja of the gurjáts of Orissa do not interfere with the consumption of Rajshahye ganja to any material extent.

Summary of the report.

139. To sum up the result of my inquiry, I found, firstly, that the area under cultivation with hemp year after year was never measured; secondly, that no measures were taken to ascertain the quantity of the annual outturn of the hemp crop; thirdly, that the places used for storage of the drug, either in the cultivators' houses or the supervisor's office, were most insecure; fourthly, that the conditions of the license to purchase ganja by wholesale were not fully acted up to, inasmuch as the holder of the license neither does nor is told to collect all ganja purchased by him in one place fixed by the local excise officer; fifthly, that the places where the drug is stored were never periodically inspected; sixthly, that useless ganja was allowed to remain in the cultivators' houses for years and years; seventhly, that cultivators were allowed to retain the drug in their possession without a license authorising them to retain it; eighthly, that going their rounds in the ganja tract was almost unknown to the supervisor and his establishment, and that consequently nothing was done to prevent smuggling of the narcotic; and, lastly, there was no check in respect to the quantity of drug actually bought by the wholesale dealers from cultivators.

For remedying these and other evils, the measures which have been suggested in the body of this report, briefly told, are as follow:—

Firstly.—That the whole of the ganja tract should be brought under the jurisdiction of the Collector of Rajshahye.

Secondly.—That a sub-division should be established at Nowgong, and placed in charge of an experienced officer.

Thirdly.—That the supervisor's establishment should be strengthened by three assistants and additional amlah.

Fourthly.—That three outposts should be established at Murádpur Bálubhorá, Itághátá, and Hápuniá.

Fifthly.—That six store godowns should be built, three at Nowgong, and one each at the three outposts.

Sixthly.—That a rent should be charged for storage in those godowns.

Seventhly.—That the supervisor and his assistants should survey and measure every field, and submit periodical reports.

Eighthly.—That no ganja should be stored in other than public godowns.

Ninthly.—That the drug left unsold after two years should be destroyed in the presence of the supervisor or one of the assistant supervisors.

Tenthly.—That the duty on the round and the flat ganja be raised by four to eight annas per seer on the existing rates, and that on chúr the duty be reduced to the amount charged on the round drug.

Lastly.—That the ganja brokers be licensed.

I have, &c.
(signed) *Hem Chunder Kerr*,
Deputy Collector on special duty.

APPENDIX A.

STATEMENT showing the Number of Persons engaged from Year to Year in the Cultivation of Gánjá, the Area under Cultivation, and the Quantity of Hemp produced in each Year from 1854 to 1876.

Year.	Number of Persons engaged in the Cultivation of Hemp.	Estimated Quantity of Land under Cultivation.	Estimated Quantity of Gánjá produced.	Remarks.
		*Beegahs Cs. Ch.	Mds. S. Ch.	
1854	2,417	- -	26,677 35 4	
1855	1,501	- -	15,472 28 0	
1856	1,704	2,608 10 0	20,868 19 8	
1857	2,066	2,244 6 0	20,973 23 0	
1858	2,195	2,622 10 0	23,291 2 8	
1859	1,785	2,187 12 8	20,626 37 0	
1860	1,439	1,873 16 0	13,998 35 0	
1861	1,517	1,890 17 0	15,496 24 3	
1862	1,973	2,206 14 0	18,417 25 0	
1863	1,226	1,544 13 0	10,810 2 0	
1864	2,118	1,921 11 0	16,332 32 0	
1865	1,175	1,309 2 0	8,288 18 0	
1866	1,261	1,399 13 0	8,761 8 0	
1867	1,504	1,639 10 0	11,116 3 0	
1868	1,053	1,161 9 0	6,508 25 0	
1869	2,096	2,096 12 0	13,758 24 0	
1870	1,559	1,677 10 0	8,608 31 0	
1871	1,786	1,647 6 0	9,830 10 0	
1872	1,568	1,531 8 0	7,622 25 0	
1873	2,480	2,407 19 0	14,274 0 0	
1874	2,161	2,278 14 0	11,885 34 0	
1875	1,269	1,290 2 0	6,496 29 0	
1876	1,908	1,816 18 0	10,814 12 0	
TOTAL	39,761	39,356 12 8	320,932 2 7	
Average	1,728	1,711 3 0	13,953 22 9	

* One beegah is equal to about one-third of an acre.

ARTICLE ON CANNABIS SATIVA.

By GEORGE WATT, M.B., C.M., F.L.S., C.I.E, Reporter on Economic Products with the Government of India.

EXTRACTED from the "Dictionary of the Economic Products of India," Vol. II., pages 103–126.

CANNABIS, *Linn.; Gen. Pl., III.*, 357. 331.

CANNABIS SATIVA, *Linn.; DC. Prodr., XVI., I.*, 30; URTICACEÆ.

HEMP; INDIAN HEMP; CHANVRE, *Fr.;* HANF, *Germ.;* CANAPE, *It.;* KONAPLI, *Rus.;* CANAMO, *Sp.;* HAMP, *Dan.;* KANAS, *Keltic.;* CANNABIS, *Latin* and *Greek.*

SYN.—C. INDICA, *Lamk.*

VERN.—*Gánjé-ká-pér, kinnab, bhang, ganja, charas, gúr, siddhí, sabzí, phúlganja,* HIND.; *Ganja, bhang, sidhí,* BENG; *Gúr-bhanga,* female and *phúl-bhanga* male fibre plant in N-W. P.; *Sahji,* or *bhang, ganja* and *charas,* N-W. P.; *Bhangí, bhang, bengí, charas, kas, sabzí, (gúlú,* the seeds, and *chel,* fibre), PB.; *Bangi,* KASHMIR; *Ganja,* C. P.; *Ganja,* GUJ.; *Ganja,* CUTCH; *Bhangacha-jháda,* MAR.; *Sidhí, gánji-ka-jhar, ganja,* DUK.; *Ganja-chedi, kórkkar-muli, ganja-ilai, bangi-ilai* (leaves), *ganja-phal* (resin), *ganja-rasham, ganja, kalpam,* TAM.; *Ganjari-chettu, bangi-aku, kalpam-chettu, ganja-chettu, ganjai, gangah,* TEL.; *Tsjerú cans-java, kancháva-chetti, gingi-lacki-lacki, ginjil-achi-lachi,* MALA.; *Bhangi, bhangi-gida,* KAN.; *Ganjika, vajradru-vrikshaha, bhanga, vijáyá, ganja, indrásana, ganjika, hangá, ujáyá, jáyá, vrij-patta, chapola, ununda, hursíní,* SANS.; *Kandir,* KASHGAR; *Kinnab, hináb, nabátul-qunnab, kanab,* ARAB.; *Darakhte-kinnab, darakte-bang, bang, nabátul-qunnab,* PERS.; *Bhénbin, ben, bin, séjáv-bin, sechaub,* BURM.; *Matkansha, ganjá-gahá, kansá-gahá,* SINGH.

The above vernacular names are either given to the plant or to the forms of the narcotic. It has been found impossible to separate them for certain, and they have accordingly been left for the present in what must be admitted an unsatisfactory form. Much apparent confusion exists in the various provincial forms of the same word.

REFERENCES.—*DC. Prod., XVI., p. I.*, 30, *published in* 1869; *Roxb., Fl. Ind., Ed. C.B.C.*, 718; *Kurz, For. Fl., Burm., II.*, 420; *Dalz. & Gibs., Bomb. Fl., Suppl.*, 79; *Stewart, Pb. Pl.*, 215; *Aitchison, Cat. Pb. and Sind Pl.*, 139; *DC. Origin of Cult. Pl.*, 148; *Voigt, Hort. Sub. Cal.*, 282; *Pharm. Ind.*, 216, 463; *Moodeen Sheriff, Suppl., Pharm, Ind.*, 85; *Flück. & Hanb., Pharmacog.*, 546; *Bentl. & Trim., Med. Pl.*, 231; *Per. Mat. Med., by B. & R., p.* 504; *Cooke, Seven Sisters of Sleep, pp.* 212–217; *T. & H. Smith, in Pharm. Journ., VI., Series I.*, 171; *Amer. Journ. Pharm., XLIX.*, 371; *Lindl., Fl. Medica,* 299; *Macnamara, Report on Gánjú, No.* 71, *dated* 11*th June* 1872; *U.S. Dispens.*, 15*th Ed.*, 388, 977; *U. C. Dutt, Mat. Med. Hind.*, 235, 293; *Dymock, Mat. Med., W. Ind.*, 603, *and* 2*nd, p.* 732; *Ainslie, Mat. Ind., II.*, 108; *O'Shaughnessy, Beng. Dispens.*, 579; *Murray, Pl. and Drugs, Sind,* 30; *Bidie, List of Raw Prod., Paris, Exh.*, 43, 83, 106; *Johnson, Chemistry of Common Life, Ed. by Church* (1880), *p.* 333; *Hem. Ch. Kerr, Report on Bengal Ganja; Year-Book of Pharmacy,* 1873, *p.* 100; 1874, *p.* 72, 105; *S. Arjun, Bomb. Drugs,* 126; *Drury, U. Pl.*, 106; *Baden Powell, Pb. Prod.*, 292, 293, 504; *Royle, Fib. Pl.*, 252, 314, 316; *Jameson, in Journ. Agri.-Hort. Soc. of India, VIII.*, 167; *Cooke, Oils and Oilseeds,* 33; *Liotard, Paper-making Mat.*, 5, 7, 10, 15, 23, 24, 28, 43; *Atkinson, Him. Dist.*, 760, 799; *Crooke, Dyeing,* 63; *F. Watson, Gums and Resins,* 28; *Birdwood, Bomb. Prod.*, 79, 212, 271, 318; *Lisboa, U. Pl. of Bombay,* 211, 233; *Duthie & Fuller, Field and Garden Crops of the N-W. P. & Oudh, Part I.*, 80; *Spons' Encyclop.*, 934–8, 1305, 1391; *Balfour, Cyclop., Ed.* 1885, *I., p.* 569; *Smith, Dic.,*

Dic., 210; *Treasury of Botany; Morton, Cyclop., Agri.; Ure, Dic. of Arts and Manufactures; Hanbury, Sc. Papers*, 187; *Kew, Official Guide, Mus., No.* 1, *p.* 120.

HABITAT.—*Cannabis indica* has been reduced to *C. sativa*, the Indian plant being viewed as but an Asiatic condition of that species. This extends the region of the hemp-plant very considerably. It has been found wild to the south of the Caspian Sea, in Siberia, in the desert of Kirghiz. It is also referred to as wild in Central and Southern Russia and to the south of the Caucasus. The plant has been known since the sixth century B.C. in China, and is possibly indigenous on the lower mountain tracts. Bossier mentions it as almost wild in Persia, and it appears to be quite wild on the Western Himalaya and Kashmír, and it is acclimatised on the plains of India generally. Indeed, the intimate relation of its various Asiatic names to the Sanskrit bhanga would seem to fix the ancestral home of the plant somewhere in Central Asia. On the other hand the Latin and Greek *Cannabis* is apparently derived from the Arabic *Kinnab*. De Candolle says that "the species has been found wild, beyond a doubt, to the south of the Caspian Sea, in Siberia, near the 'Irtysch,' in the desert of the Kirghiz, beyond Lake Baikal, and in Dahuria." He is doubtful of its being a native of Southern and Central Russia, but suspects that its area may have extended into China, and is not sure about the plant being indigenous to Persia.

Hemp acclimatised and cultivated in India.

It has gone wild as a cold-season annual on rubbish heaps in Bengal and in many other parts of the plains of India. It is specially reported as springing up spontaneously on the churs of the Suburnrekha and to be wild in the territory of the Mohurbhunge State on the frontier of Midnapur and also in Singbhum. It is cultivated more or less throughout India, either on account of the narcotic derived from (*a.*) the resin, charas; (*b.*) the young tops and unfertilised female flowers, gánjá (or gánja); (*c.*) the older leaves and fruit-vessels, bhang; or on account of the fibre, hemp; or the ripe seed from which an oil is prepared. Ganja is derived from the cultivated plant, reared in Eastern Bengal, the Central Provinces, and Bombay; charas, from the cultivated plant on the mountain tracts such as in Nepal, Kashmír, Ladakh, Afghánistan; Bhang from the wild plant on the lower hills, especially in the North-West Provinces, the Panjáb, and Madras. In Europe, especially in Central and Southern Europe, the plant is cultivated on account of the fibre, and the seeds are eaten or made into oil. For some time the European form of the plant was supposed to be distinct from the Asiatic, the chief value of the latter consisting in its narcotic properties; but this distinction has now disappeared from the literature of the subject, since it could not be supported by botanical characters. The reduction became the more necessary when it was fully understood that, according to climate and soil, the Indian plant varied in as marked a degree as it differed from the European. On the mountains of upper India, for example, it yields a good fibre which the natives separate and weave into garments or twist into ropes, but its chief value in Kashmír and Ladákh consists in the fact that, just before maturing its flowers, the bark spontaneously ruptures and a resinous substance exudes. This is also found upon the young leaves, flowers, and fruits, and when rubbed off constitutes the narcotic charas. The same plant cultivated in the plains is found not to secrete its resin in this way, but instead it charges the young female flowers and twigs with the narcotic principle; this constitutes the ganja. It has been observed that if even one or two male plants are left in a field, the whole crop of ganja will be destroyed, since, with the fertilization of the flowers, the ganja almost entirely disappears. In other parts of India the narcotic property is not developed until the fruits are mature; leaves at this stage, and sometimes the fruits also, afford bhang. With *Cannabis indica*, differing in so marked a degree according to the climate, soil, and mode of cultivation, it was rightly concluded that its separation from the hemp plant of Europe could not be maintained. We have here, in fact, one of the most notable illustrations of the effect of climate in changing the chemical processes which take place in the structure and physiological peculiarities of a plant. In most instances, a plant taken by man from one climatic condition to another, either dies quickly, or if it survives, it exists in a sickly condition. A few plants, however, such as the potato, the tobacco, the poppy, and the hemp, seem to have the power of growing with equal luxuriance under almost any climatic condition, changing

Forms of hemp.

or

or modifying some important function as if to adapt themselves to the altered circumstances. As remarked, hemp is perhaps the most remarkable example of this; hence it produces a valuable fibre in Europe, while showing little or no tendency to produce the narcotic principle which in Asia constitutes its chief value.

The plant for one or other of these purposes is now extensively cultivated throughout Persia; in India, from the level of the sea in Bengal to the inner Himálaya at an altitude of 10,000 feet; in China, in Arabia, and in Africa, from the extreme south to the north, and on the mountains as well as on the plains; in the north-eastern portions of America and on the table-land of Brazil. It is also to be met with in Northern Russia even as far as Archangel. In England it not unfrequently occurs as a weed, springing up most probably from rejected birdseed.

The modes of cultivation and the nature of the soil required, depend on the purpose for which the plant is cultivated. This subject will accordingly be discussed later on.

History of Hemp.

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The Narcotic.

Indian Literature.—"The earliest synonym appears to be bhanga, which occurs in the Atharva Veda, the last of the four scriptures of the Hindús. It is derived from a root which means "to break," and is supposed to imply the process of debarkation by which the fibres of the plant were separated from the stem. This would indicate that even at the remote period when the Veda in question was written, probably about 3,000 years ago, the use of hemp as a fibre-yielding plant was well known and the knowledge fully utilised. The Veda, however, reckons it along with the Soma, as one of the five plants 'which were liberators of sin,' and this would imply that its narcotic property was also well known. The word is used in the masculine form with a short final vowel, and not, as in later literature, with a long one. Both the masculine and feminine forms of the name are still in use by the people of the Himálayan regions, who call the male plant Phúl bháng, and the female Gúl (or gúr) bhanga. In the Kausitaki Brahminia of the Rig Veda, which is next in antiquity to the Atharva, the attributive form of the word Bhanga, derivable both from the feminine and the masculine forms, occurs both singly and in combination; one, Bhángájala, meaning a hempen net; and another Bhanga-sayana, a 'bedstead woven with hempen cords.' The masculine form occurs in the celebrated medical treatise of Susruta, in which the plant is described as a medicine for the accumulation of phlegm in the larynx and for some other diseases." "In the institutes of Manu the feminine form is used, and the plant is noticed for its fibres. In later works the feminine form prevails" (Mr. Hem Chunder Kerr). The curious fact of the popular opinion, that the ganja-yielding plants are males and the staminate or non-narcotic-yielding females, prevailing to the present day, would seem to corroborate the inference that in Asiatic countries during ancient times the plant was cultivated chiefly for its narcotic properties. Hence, in all probability, the habit of speaking of the narcotic in the masculine form of the name, and of the fibre in the feminine. As a matter of fact, the narcotic-yielding is the reverse to the popular belief; the male or staminate plants are rooted up as being non-narcotic, and the pistilate or female are allowed to mature, so that, botanically speaking, it is the female which yields the narcotic not the male. Not being fecundated, the female plants do not mature fruits and seeds, and are accordingly viewed as male. Bretschneider informs us that the male and female plants were recognised by the Chinese as early as 500 B.C. It may be here incidentally remarked that this distinction would seem to point to the idea that the ancient Chinese and Sanskrit writers were aware of the existence of male and female flowers centuries before the sexes of plants were realised in Europe.

History.

The intoxicating property of the drug is implied in the names ánandá, "the joyous," harshini, "the delight-giver," madini, "the intoxicator," and ganja and ganjákíní, "the noisy." The probable importation of the narcotic in ancient times into India in a prepared form, as it comes at the present day from Yarkand, is indicated in the name Káshmírí often applied to it in early literature. It is thus probable that the knowledge of the narcotic, or at least of charas, was brought to India across the Himálaya.

The narcotic. 333.

Classical Literature of Europe.—The ancient Scythians seem to have been acquainted with the narcotic properties of the plant as well as with its fibre. Herodotus tells us that they excited themselves by "inhaling its vapour." "Homer makes Helen administer to Telemachus, in the house of Menelaus, a potion prepared from nepenthes, which made him forget his sorrows. This plant had been given to her by a woman of Egyptian Thebes; and Diodorus Siculus states that the Egyptians laid much stress on this circumstance, arguing that Homer must have lived among them, since the women of Thebes were actually noted for possessing a secret by which they could dissipate anger or melancholy. This secret is supposed to have been a knowledge of the qualities of hemp" (Johnston, "Chemistry of Common Life," 337).

Mythology. 334.

Mythological History of the Narcotic.—"The notices of hemp in Arabic and Persian works are much more numerous. The oldest work in which it is noticed is a treatise by Hassan, who states that in the year 658 A.H., Sheik Jafer Shirazi, a monk of the order of Haider, learned from his master the history of the discovery of hemp. Haider lived in rigid privation on a mountain between Nishabar and Rama, where he established a monastery. After having lived 10 years in this retreat, he one day returned from a stroll in the neighbourhood with an air of joy and gaiety; on being questioned, he stated that, struck by the appearance of a plant, he had gathered and eaten its leaves. He then led his companions to the spot, who all ate and were similarly excited. A tincture of the hemp leaf in wine or spirit seems to have been the favourite formula in which Sheik Haider indulged himself" (Dymock, "Mat. Med., W. Ind.," 604).

A curious story is told in the Hindú mythology about the origin of this plant. "It is said to have been produced in the shape of nectar while the gods were churning the ocean with the mountain called Mandára. It is the favourite drink of Indra, the king of gods, and is called vijayá, because it gives success to its votaries. The gods, through compassion on the human race, sent it to this earth, so that mankind by using it habitually may obtain delight, lose all fear, and have their sexual desires excited. On the last day of the Durga Pooja, after the idols are thrown into water, it is customary for the Hindús to see their friends and relatives and embrace them. After the ceremony is over it is incumbent on the owner of the house to offer his visitors a cup of bhang and sweetmeats for tiffin (lunch)" (U. C. Dutt's "Mat. Med. Hind.," 236).

More Recent Historic Facts regarding the Narcotic.—The use of hemp (bhang) in India was particularly noticed by Garcia de Orta (1563), and the plant was subsequently figured by Rheede, who described the drug as largely used on the Malabar coast. It would seem about this time to have been imported into Europe, at least occasionally, for Berlu, in his "Treasury of Drugs," 1690, describes it as coming from Bantam in the East Indies, and "of an infatuating quality and pernicious use."

"It was Napoleon's expedition to Egypt that was the means of again calling attention to the peculiar properties of hemp, by the accounts of De Lacy (1809) and Rouger (1810). But the introduction of the Indian drug into European medicine is of still more recent date, and is chiefly due to the experiments made in Calcutta by O'Shaughnessy, in 1838-39. Although the astonishing effects produced in India by the administration of preparations of hemp are seldom witnessed in the cooler climate of Britain, the powers of the drug are sufficiently manifest to give it an established place in the pharmacopœia." ("Flück. & Hanb., Pharmacog.," 547-48.)

Fibre. 335.

The Hemp Fibre.

The following extract may be here published as giving the most trustworthy facts which can be adduced regarding the history of the fibre: "According to Herodotus (born 484 B.C.), the Scythians used hemp, but in his time the Greeks were scarcely acquainted with it. Hiero II., King of Syracuse, bought the hemp used for the cordage of his vessels in Gaul, and Lucilius is the earliest Roman writer who speaks of the plant (100 B.C.) Hebrew books do not mention hemp. It was not used in the fabrics which enveloped the mummies of ancient Egypt. Even at the end of the eighteenth century it was only cultivated in Egypt for the sake of an intoxicating liquid extracted from the plant. The compilation of Jewish laws known as the Talmud, made under the Roman dominion,

dominion, speaks of its textile properties as of a little known fact. It seems probable that the Scythians transported this plant from Central Asia and from Russia, when they migrated westward about 1,500 B.C., a little before the Trojan war. It may also have been introduced by the earlier incursions of the Aryans into Thrace and Western Europe; yet in that case it would have been earlier known in Italy. Hemp has not been found in the lake dwellings of Switzerland and Northern Italy" ("DC., Orig. Cult. Pl., 148.")

The Arabic Name for the plant, benj, and the Persian beng, seem but corruptions from the Sanskrit bhanga. The common name for hemp in Arabic is, however, kinnab or konnab, admittedly the origin of the Greek Kannabis and of the Latin Cannabis, and from this again the English word canvas. So, in a like manner, the Arabic hashísh would seem to be given in allusion to the green intoxicating liquor, and allied to this would appear to be the Hebrew shesh, a word supposed by some to be a name for flax, but may have rather been applied to hemp, since it literally means "to be joyous." Persons who drink the draught are called hasháshíns (or bhangis, *e.g*, drinkers of green liquid). As a curious illustration of the origin of names or of words, it may be here remarked that Mr. Sylvester de Lacy, the well-known Oriental scholar, derives the modern English word "assassin" from hasháshín (or haschischin), persons who fortify themselves with hasish before performing certain ceremonies or perpetrating inhuman deeds. The word according to some would appear to have been originally used In Syria to designate the followers of "the old man of the mountains;" by others it came into European use during the wars of the Crusaders. Certain of the Saracen army having intoxicated themselves with the hashísh, rushed fearless of death into the Christian camp, committing great havoc. It seems probable that the English form of the word was adopted at the latter date, but that the more Arabic form was known in Europe for some time previous. Hemp is alluded to in the "Arabian Nights" under its more ancient Arabic name, beng.

Canvas.

Assassin.

Cultivation.

Cultivation 336.

It has already been incidentally remarked that the cultivation of *Cannabis sativa* in India must naturally be referred to two sections: (*a*) Cultivation with a view to preparing some of the forms of the narcotic, and (*b*) cultivation on account of the fibre. It has also been stated that the hemp plant has, to a large extent, changed its character under Indian or rather Asiatic cultivation. It is very generally admitted, for example, that in the plains, while the narcotic principle is readily developed, the hemp fibre is but very imperfectly formed. Let it, however, be distinctly understood, that by hemp is here exclusively meant the fibre of *Cannabis sativa*. This remark is all the more necessary when it is added that in the Government returns of the Trade and Navigation of British India, the fibre of *Cannabis sativa*, as well as that of *Crotalaria juncea*, *Musa textilis*, and perhaps the fibres also of one or two other plants, are commercially returned as hemp, and the manufactures therefrom as hemp manufactures. To obtain the true hemp fibre, a rich soil and a high state of cultivation is required in a temperate climate. The plant will grow anywhere in India, and may be said to be naturalised in every province. This fact seems to have influenced the minds of the earlier writers on this subject, who uniformly urge that since it grows so freely in a wild state, it might be cultivated to any desired extent as a source of fibre. Dr. Stocks (one of the most careful observers India has ever had) wrote in 1848: "The plant grows well in Sind, and if it ever should be found advantageous (politically or financially) to grow hemp for its fibre, then Sind would be a very proper climate." The writer does not think that the question of its possible cultivation as a cold season fibre crop on the plains of India has been fully tested. There may be some localities where this might be found possible, and even remunerative, but so far as the published experiments go, like flax the hemp plant may be grown freely enough, but not as a source of fibre. The flax plant of the plains of India yields a superior oil-seed, and the hemp plant a valued narcotic, but neither justifies the expectation of becoming a profitable fibre crop. This fact would not seem to have been fully realised by writers in Europe, and on the one hand the existing cultivation of hemp as a source of narcotic has been confused with a supposed fibre production, while on the other the reports of the limited Himalayan cultivation as a source of fibre have been mistaken as the total Indian cultivation of the plant. The authors of the "Pharmacographia" say: "It is found in Kashmir

Expectations regarding Indian Hemp.

Kashmir and in the Himalaya, growing 10 to 12 feet high, and thriving vigorously at an elevation of 6,000 to 10,000 feet." Balfour, in his new edition of the "Cyclopædia of India," while stating incidentally that the "plant is grown in Persia, Syria, Arabia, and throughout India," enters into an account of its cultivation in Garhwal, with the apparent object of proving that it is more extensively grown there than in the Panjab, but he makes no mention of the fact that the principal seats of hemp cultivation, as a commercial article, are in Eastern Bengal, the Central Provinces, and Bombay. The "Encyclopædia Britannica" has also fallen into the same mistake, and indeed illustrations might be multiplied to show that undue prominence has been given to the fact that the plant is grown in Garhwal, the Panjab, and Kashmir, the more so since by most writers the true regions of Indian cultivation have been, to a large extent, overlooked.

Unfortunately the available material is too meagre to allow of the subject being dealt with province by province, although there are doubtless different methods pursued in each. This difficulty fortunately does not exist with the Lower Provinces, since Mr. Hem Chunder Kerr, in his "Report on the Cultivation of and Trade in Ganja in Bengal (1877)," has placed in the hands of the public a valuable treatise which deals both with the cultivation of the plant and the preparation of the narcotic. Dr. Forbes Royle in 1855 issued his "Fibrous Plants of India," a work which treats of hemp at some detail, discussing mainly the cultivation pursued in Upper India. A more recent publication, Messrs. Duthie and Fuller's "Field and Garden Crops," gives a brief account of the cultivation in the North West Provinces. From these works, supplemented by several less important publications and Government reports, the following abstract regarding Indian cultivation has been prepared :—

For the narcotic. 337.

(*a*) Cultivation for the Narcotic.

Bengal Cultivation.—The method pursued in Eastern Bengal, according to Mr. Hem Chunder Kerr, is briefly as follows : After selecting the land for hemp cultivation, the preparation of the soil commences in March April, but where this can be afforded, operations are started even earlier. The sites selected are those which are moist, but not shaded, and the soil a rich friable loam. The land is then ploughed from four to 10 times, the object being to free it as far as possible of all weeds. Fresh earth from the surrounding ditches or from any neighbouring low-lying land is thrown over the field, and it is freely manured with cow-dung. After a week this is ploughed into the soil, and the ploughing repeated as often as the means of the cultivator will admit of. The belief is that for hemp the land cannot be too often ploughed. The rains now set in, and the field is thoroughly flooded, the surrounding banks preventing the escape of the water. While inundated it is several times ploughed and harrowed. After the rains subside the ploughing is again repeated, and the soil thrown into ridges a foot high, the furrows being a foot in breadth.

Nursery.—It is customary for the cultivators to combine in the rearing of seedlings. This is done in a nursery selected on high land of a light sandy loam. The preparation of the nursery generally commences in May, after the first shower of rain. The plot is repeatedly ploughed, and if need be, harrowed, until, by August, the soil has been completely pulverised. On a sunny day the seed is sown broadcast, and by the latter end of September, the seedlings are about 6 to 12 inches high, and are then ready for transplantation. About 4 to 5 seers of seed are deemed necessary for every bigha of land to be cultivated with hemp.

Transplantation.— The seedlings are planted out 6 to 8 inches apart on the ridges prepared for their reception, after having been simply pulled up by the root; they are planted the same day in the field. (Dr. Royle says that for bhang the seedlings should be planted 9 or 10 feet apart.) Towards the end of October the ridges are opened out, manured with oil-cake and cow-dung, and thereafter reformed, so that freshly manured soil is thrown up around the plants.

Treatment of the plants.—Trimming of the plants commences by November. This consists in lopping off the lower branches so as to favour the upward growth of the shoots. The ridges are again re-dressed and manured, the furrows ploughed,

ploughed, and all weeds removed. At this stage the plants begin to form their flowers, when the services of an expert, known as the ganja-doctor (poddar or parakdar) are called in. This person passes through the field, furrow by furrow, cutting down all the male or staminate plants, or what are colloquially known as madi (female) plants. Speaking of the importance of this operation, Mr. Hem Chunder Kerr remarks: "The presence of a few madi plants in the field suffices to injure the entire crop, inasmuch as all the plants run into seed, and the ganja yielded by them is very inferior, and scarcely saleable." The destruction of the madi plants is, however, never so complete but that a few escape detection, the result being that a certain number of the female plants are fecundated, fruits and seeds being produced. These are thrashed out as far as possible in the manufacture of the drug, the quality of which may be judged of by the freedom from such impurities. Fruits injure Ganga.

The female plants come to maturity about the beginning of January, but the ganja is not fully developed till a month later. The crop is sold in the field to the ganja dealers, who bring their own men to manufacture it. The crop intended to be made into what is technically known as flat ganja is reaped a few days before that intended for the round form.

In another page will be found an account of the processes of manufacture of the various forms of ganja, together with considerable details as to the extent of cultivation as a source of the various forms of the narcotic.

(*b*) Cultivation for the Fibre-hemp.

Indian Methods.—Dr. Royle very appropriately remarks: "There is every reason for believing that the plant is of eastern origin, while there is no sufficient reason for thinking that the climate of Europe is so peculiarly suited to the production of its fibre as to exclude those of its native climes, especially where attention is paid to those where the plant is grown on account of its fibre, and those distinguished from the others where it is cultivated for its resinous and intoxicating secretion. The latter requires exposure to light and air. These are obtained by thin sowing, while the growth of the fibre is promoted by shade and moisture, which are procured by thick sowing." It has already been pointed out that the regions suited for ganja cultivation are perfectly distinct from those where it might be possible to develope an industry in the fibre. However much it may be regretted, it seems impossible to combine the two industries, and it is an accepted fact that unless utilisable as a paper stock, the immense amount of stems annually destroyed by the ganja cultivators must continue to be so. For the fibre. 338.

At the same time, Mr. Morris, in his account of the Godavery District, gives some interesting facts regarding the cultivation of hemp fibre. It is planted in November and cut by the end of March. It is grown in drills and never watered. Clay soils and those beyond the reach of innundation are those best suited. "About 2,200 bundles can be produced in one pulti of land, each bundle yielding 1½ viss of fibre, or a total of 3,300 viss or 412½ maunds, and is valued at 1 rupee a maund. The expenses of cultivation are estimated at R. 8–8, and those of the preparation of fibre at Rs. 100 a pulti of land. The bundles are buried in mud, and left to rot for about a week, when they are taken out and beaten in the water; and after all impurities are removed, the fibre is collected." The exports from the district are said to have been, in 1854–55, 4,269 cwt. Godavery Hemp. 339.

Unless there be some mistake, sunn-hemp, having been called "Cannabis sativa," for Mr. Morris gives that scientific name, as well as the vernacular name *Zanumu* for the fibre he is describing, this information is of the greatest interest, as it would show, what the writer was not aware of until recently, that hemp fibre was actually produced on the plains of India.

Early Experiments in Hemp Cultivation.—In 1802 the Government of India made various experiments on an extended scale to establish hemp fibre cultivation. European seed was imported, and farms and factories established, but finally abandoned. Recourse was had to improving the cultivation of the Indian stock. The cultivation and manufacture was carried on at Rishra, Cassimpore, Maldah, Gorackpore, Mhow, Rohilkand, and Azimgarh, under the experienced supervision of European hemp dressers. The result was everywhere unsatisfactory and the efforts were abandoned.

Inquiry was re-instituted in 1871 as to whether the rejected stems from ganja cultivation might not be utilised for fibre, but the result in this case was again unfavourable.

Possible Prospects.

The possibility of more favourable results.—In spite of these disheartening results it cannot be definitely stated that it is impossible that hemp fibre can be produced in India. The efforts alluded to were mainly directed to combining the two industries of producing resin and fibre, and the regions selected were accordingly those where it is now believed the plant does not develope its fibre. There may, however, be localities where further investigation might prove that it was possible to organise a commercial fibre industry. It is well known, for example, that the people of Kumáon and Garhwál grow the plant on account of its fibre. With the results of the experiments conducted at the beginning of the century before him, Dr. Royle still entertained the highest hopes of ultimate success. From a paper which appeared in 1839, in the "Transactions of the Agri-Horti. Society of India," Vol. VIII., page 15, the following passage may be reprinted, as it expresses pretty clearly Dr. Royle's view: "This (hemp) might be cultivated in suitable situations in India, in a manner similar to that adopted in Europe, or like that practised with its substitutes in India. The effect would undoubtedly be to produce a sufficiently long fibre, which would also be softer and more pliable, at the same time that it retained a great portion of its original strength, and probably in as large a quantity as is yielded by the sunn plant. Thus, an article might be produced, which, judging from the Indian samples, might enter into competition with the Russian product, and at all events afford much more valuable cordage than the several (usually considered) inefficient substitutes which are so extensive in India, and which, imported into England, sell only for 15 to 20 shillings per cwt., at the same time that the Russian, Polish, and Italian hemps are selling for 42 to 50 shillings per cwt." In his "Fibrous Plants" Dr. Royle alludes to successful experiments of hemp cultivation in the plains, especially at Chittagong. But in most cases, as was proved with the plant reared at Saharanpur, it is admitted that the plains crop is far inferior to that reared on the hills. The opinion is therefore arrived at that if the cost of transmission from the hills to the sea-ports can be reduced, it might be possible to greatly extend the cultivation of hemp on the lower Himalaya. Mr. Atkinson, "Himalayan Districts," p. 800, gives a long and instructive account of the methods of culture, compiled chiefly from Huddleston and Batten's notes. There are said to be two varieties common in Garhwál, the wild and the cultivated. The former is practically useless either for the fibre or the drug. The cultivated form is grown in high land having a northern exposure and in well prepared and abundantly manured land close to the village sites. Occasionally freshly cleared forest land gives a crop for a year or two without the aid of manure. The plant does not flourish below 3,000 feet, as the heat of the valleys is prejudicial to its growth, and it seems to thrive best at from 4,000 to 7,000 feet in altitude above the sea. After being well prepared and freed from weeds, the ground is sown in May or June. During the growth of the plants the ground is once or twice dressed, and where necessary the plants thinned so as to leave a few inches between each. The plants ultimately attain a height of 12 to 14 feet, and from September to November the crop is regarded as mature. In warm situations the crop is sown later than May to June so as to save the seedlings from running into useless stalks during the heat and rain of the early period of its growth. In Nepal the sowing takes place from March to April, flower in July, and reach their full growth by August: if allowed to grow longer the fibre becomes hard and not suitable for manufactures. Messrs. Duthie and Fuller, in discussing the north-west Himalayan hemp fibre cultivation, allude to the fact that a form of charas is at the same time prepared, and Mr. Atkinson adds that "the farm of charas in Kumaon alone, during 1880–81, was sold for 3,357 rupees." It is commonly reported that the cultivation of the hemp-narcotics is prohibited in the North-West Provinces. In an early paragraph, No. 399, it has been shown that hemp fibre would appear to be cultivated in the Godavery District.

Season of Sowing and Reaping.—Messrs. Duthie and Fuller remark: "The seed is sown in May at the rate of 30 seers to the acre, and the plants are thinned

thinned out if they come up too closely, and are kept carefully weeded. By September they will have attained a height of 12 or 14 feet. In the hemp the male and female organs are contained in separate flowers and borne on separate plants. The male plants (called phúl-bhang) yield the best fibre, and they are cut a month or six weeks before the female plants (gul-bhang), which are allowed to stand until their seed ripens. The next process is the collection of the charas, which is done by rubbing the seed pods and leaves between the hands."

European Cultivation for the Fibre.—Dr. Royle and several other authors give accounts of the methods pursued in Europe in hemp cultivation. The limited space at the writer's disposal precludes this being entered into in detail, but the reader who may desire further information is referred to Spons' "Encyclopædia of Manufactures and Raw Materials" (1882), Vol. I., 934. It is stated by most writers that while the plant will grow almost anywhere in the temperate and sub-tropic regions of the globe, it can be made to yield a profitable fibre only when reared on rich soil, freely manured and repeatedly ploughed. "Alluvial lands, where sand and clay are intimately mixed, or friable loams, containing much vegetable matter, are well suited. Stiff cold clays are to be avoided. Over-rich soils produce coarse but strong fibre; light poor soils, when well manured, will bear the crop for several years in succession."

Italian hemp. 340.

The best fibre is that raised in Italy, but it is generally stated that seed from Holland is most esteemed; well-grown English seed is perhaps equal to it. "Seed from the plains of India, though of good outward appearance, yields poor fibre for the first crop or two; but Himálaya seed is inferior to none." Constant change of seed is recommended, and good seed is described as plump and of a bright-grey colour.

Male fibre. 341.

"The fibre afforded by the male plants is tougher and better than that yielded by the females; it is usual to divide the harvest. The males are gathered as soon as they have shed their pollen, about 13 weeks after sowing; each is uprooted singly, care being taken not to injure the stem.

"The fibre is separated either by retting or by breaking and scutching."—("Spons' Encycl.")

Properties and Uses of Cannabas sativa.

Economic Properties.

From the stems, leaves, or flowers, and even the fruits, a resinous extract, of a powerful narcotic character, may be prepared. The inner bark affords the valuable fibre hemp. The seeds are occasionally eaten; they are much valued for feeding birds. An oil is expressed from them which is of some importance, but can scarcely be called commercial.

Resin or Narcotic.

There are primarily three forms of this substance, but under each there exist also local modifications, special preparations from these, and adulterants or imitations. The three forms are known as ganja, charas, and bhang. Ganja is the female flowering tops with the resinous exudation on these; charas the resinous substance found on the leaves, young twigs, bark of the stem, and even on the young fruits; bhang, the mature leaves, and in some parts of India the fruits also, but not the twigs.

Bengal Manufacture.

Ganja. 342.

(1.) *Ganja.*—This is known in the trade as consisting mainly of two forms: flat ganja and round ganja. Speaking of the manufacture of ganja in Bengal, Mr. Hem Chunder Kerr says: "In February and March, when ganja attains its maturity, the cultivator proceeds to make arrangements for reaping the crop and preparing the drug. His first step is to present himself to the supervisor, show him the license under which he has grown the crop, and obtain his permission to remove the crop from the field." For flat ganja, cutting out of the plants commences in the morning; for round ganja, in the afternoon, and by the Hindus Thursday, and by the Muhammadans Friday, is considered the best day for commencing operations.

Flat. 343. *Flat-Ganja.*—The stems are cut with a sickle about 6 inches above ground, and are tied together by their ends and placed across a bamboo, and in this manner carried to the place of manufacture. In the preparation of flat ganja (chapta ganja) they are exposed to the sun till about 1 or 2 o'clock in the afternoon. The twigs are then cut into lengths of about a foot, the non-flower-bearing portions being thus cut off and rejected. If by any chance male plants (khásiá) have been brought from the field, these, together with any fruit-bearing female twigs, are carefully picked out and thrown away, the seeds if ripe being first retained for next year's crop. At dusk the selected flowering heads are laid on the grass and left overnight to the influence of the dew. At 2 o'clock of the following afternoon they are assorted in bundles of from three to 10 according to their size. These are arranged on a mat in a circular form, with their points directed towards the centre, and overlapping each other. The circle thus formed is about 14 feet in circumference. Upon this a number of persons, holding each other by resting their arms across each other's shoulders, commence to tread. They stamp and press down the flowering heads with their right foot, while holding them tight with their left. This operation is continued for three or four minutes, when the narcotic resin is pressed firmly among the flowers in the desired form. Fresh twigs are then arranged over those which have been pressed, and the treading repeated. This process continues until the ring rises to about a foot in height. Care, however, is taken not to place the resinous flowering-tops exactly on the top of each other, since this would result in the formation of an inextricable mass. Before the trampling commences the persons to be so employed salute the ganja before placing their feet on it. When the process is complete the treaders get down. Mats are placed over the sack, upon which one or two men sit down and remain for about half-an-hour. After this fresh mats are spread and the flowering twigs beaten two and two together to shake off the leaves or any fruits that may still remain, and are rearranged in a new circle, so that what was on the top before now forms the bottom layer of the new circle. The treading is repeated stage by stage until the stack is again covered by the mats, and men take up their inexplicable seat on the top. After this each twig is trodden upon separately, being placed for that purpose on a canvas cloth; by sunset the process is completed for the day's manufacture. Next day the treading is repeated with slight modifications of little importance in the peculiar method followed. The ultimate result of all this labour is that the resin and flowers are firmly consolidated into flat patches near the apex of the twigs, and the leaves and fruit vessels (if such exist) carefully removed.

The twigs are then carried to the homesteads and stacked, with the tips pointing inwards, and the stems thus exposed to be dried; when completed the top of the stack is carefully covered in with mats.

Round. 344. *Round Ganja.*—In the manufacture of round ganja greater care is bestowed. A larger amount of the twigs and leaves are rejected. Instead of being arranged in a circle they are placed on the ground in a straight line and just below a bamboo bar on which the men rest their arms and thus support themselves while treading. Instead, however, of tramping they now roll twig by twig so as to force the resinous matter into the form of a thin sausage shape near the apex of the twig. This rolling is repeated several times, and the twigs even taken up in the hands and individually trimmed, superfluous leaves, &c. being picked out, and when loose the resin pressed into the desired form by the fingers.

Chur or rora. 345. *Ganja Powder or Chúr.*—When perfectly dry both the flat and round ganja are next bailed in a prescribed manner, and during this operation a certain amount of loose particles of the resinous matter falls off; this is known locally as chúr. Under the excise rules a separate rate is fixed for chúr. It is held to be more powerful than the round ganja, and therefore the duty on it is 4 rupees as compared with 3 rupees a seer on round ganja. The fragments which constitute chúr cannot be made to adhere, and although prepared at one and the same time with the pressed or rolled ganja and from the self-same plants, it is probable that these fragments exist in a slightly different chemical state, and probably more nearly resemble charas than ganja. Chúr is also known under the name of rorá.

Mr. E. T. Atkinson (in his "Himálayan Districts," p. 761) says of the ganja of the N.W. Provinces: "The ganja produced in Kumáon and Garhwál is considered

considered of little value, and is not, so far as I am aware, exported. The ganja consumed locally is imported from the lower districts. Two sorts of ganja are sold in these Provinces: the pattar and the bilúchar. The pattar is imported chiefly from Holkar's territories, and is of quality inferior to the Bengal ganja. It is purchased at from five to six rupees a maund in Indúr in the rough state," and "pays a duty of about four annas per maund on exportation to British territory." It is sold retail at from three rupees to four rupees a seer. The bilúchar variety is imported from Lower Bengal, and is sold at 10 rupees to 12 rupees a seer.

Bombay and the Central Provinces.

Imitations of ganja.

Although definite information cannot at present be obtained as to the details of the process of manufacture of ganja as followed in the Central Provinces and Bombay, it is probable that it differs but slightly from that narrated above as pursued in Bengal. Dr. Irving, in his "Materia Medica of Patna," however, informs us that there are two imitations of ganja, or perhaps more correctly, of charas. The one is obtained by evaporating the expressed juice of the plant, and the other an extract obtained by boiling the whole plant. To what extent these adulterants are sold separately or mixed with the pure drug it is difficult to learn, but as far as Bengal is concerned, it may confidently be stated that adulteration can alone take place when the intoxicant reaches the hands of the dealer. In the golás it is quite pure.

Expressed juice. 346.

Decoction. 347.

Mention of chúr, and of the extracts referred to by Dr. Irving, naturally lead to the consideration of:

Charas. 348.

(2.) *Charas.*—This may be defined as the resinous substance which naturally exudes from the leaves, stems, and fruits of the hemp plant (see No. 267) in more northern or higher regions, where the plant is accordingly grown in a colder climate than that of the ganja-producing districts of the plains. In another page (No. 336) it will be seen that Dr. Aitchison says that the resin collected from the leaves and flowers is in Turkistan called nasha—the charas of trade. Before being exported it is, however, very much adulterated, so that nasha and charas are practically two very different substances. Mr. Dalgleish informs the writer that at Yarkand-Kashgar the charas is collected as a fine greyish white powder by beating the flowering twigs over a coarse cotton cloth spread on the ground, The crop is reaped about November, and the powder stored in small 2 to 4 lb. bags. About May these are sold to the traders, who cut the bags open and spread out the now partially agglutinated powder on cloths under the sun. It softens and deepens in colour, and is hard pressed into bags or bales 1½ maunds in weight (a half pony-load) ready for exportation. The quality is judged of by the amount of oil seen through the degree of transparency in a fragment flattened on the hand until it is of the thickness of paper, or by rolling a small piece into a cord and exposing it to the sun for a few moments. The oil is sucked on to the surface of the cord, the charas deepens in colour; but if pure, on being broken it seems to be composed of minute granules of the appearance of pure steel. With age, the oiliness is sucked out of the charas, or by being exposed, it is then valueness. Charas is in Yarkand adulterated with linseed oil and a powder of the hemp leaves.

From the above description it would appear as if Yarkand charas was not the resinous exudation from the leaves and stems, as in Sind, Kashmir, &c., but a powder formed on the flowers similar to the chúr of Bengal (see No. 257), and the garda (No. 271) of the Punjáb. In Kumáon and Garhwál the cultivators who grow the plant as a source of fibre are said to rub the fruits between their hands so as to remove the resin. This is regarded as a form of charas, and the out-turn of an acre is said to be four maunds fibre, worth eight rupees, and three seers charas, six rupees. Of Nepál it is commonly reported that a very fine quality of charas known as momea is similarly prepared. (See Church's "Ed. Johnston's Chemistry of Common Life"; Spon's "Encyclop."; "O'Shaughnessy," &c.) Dr. Gimlette, Residency Surgeon, Katmandu, Nepál, writes to the author, however, that the word momea, as applied to charas, is unknown at the present day in the vicinity of the capital. Speaking of the modes of collecting charas, as practised in Nepál, Dr. Gimlette adds: "I have been unable to verity the accounts of the collection of charas by means of leather coats worn

Momea. 349.

by men, who run about among the plants; this may possibly occur on the northern frontier of Nepál. Within a radius of 50 miles of Katmandu, the extract is collected by rubbing the young flowering tops between the hands in situ; one man is able thus to collect in a day two tolas weight. Charas is sold in the Katmandu bazaar at two rupees, in the Tarai markets at three rupees, per tola."

Momea of Nepal. 350. It is a remarkable coincidence, however, that a drug *is* sold in the bazaars of Katmandu under the name of momea or mimea. This, Dr. Gimlette says, is not a preparation of hemp. He thus describes it: "Momea is a mixture of dhup, oil, and lymph, the latter specially induced in the human subject by a certain drug. The preparation is also brought from Tibet, where human fat is said to be used as an ingredient. This curious drug is given internally in cases of wounds and ulcers along with ghi; dose one masha." It is noteworthy, in connection with Dr. Gimlette's discovery regarding human fat used in the manufacture of Nepál momea, that amongst the ignorant classes of Northern India a superstition prevails that they may be captured and carried off to some distant land to be made into momea. This fact has been alluded to by various officers in their reports on the objections raised by the poorer classes against emigration. Speaking of this subject, Colonel D. G. Pitcher, in a report dated June 1882, writes: "The feeling of the native community on the subject of emigration is, for the most part, *nil*, or a ludicrous distorted image, in which the coolie hangs head downwards like a flying fox, or is ground in mills for oil." "The natives have in some parts of the country a strong belief that coolies are suspended head downwards to facilitate the extraction from them of oil." In a recent expedition into Kullu this same superstition was brought out in an alarming manner. (See p. 6, *Gazette*.)

Mumiai. 351. It seems probable that the word momea has been erroneously applied to hemp, and in partial support of this suggestion it may be added that the word mumiai is, in Afghanistan, applied to a substance which apparently has no relation to the narcotic of hemp. Ball, in his "Economic Geology," says of this substance: "In Afghanistan it is believed that there are several localities where bituminous products occur, as they are commonly sold as drugs in the bazaars of that country. According to Captain Hutton ('Cal. Jour. Nat. Hist., Vol. VI., 601'), a mineral pitch called 'mumiai' by the natives, which is used for external application, is found in the Shah Makhsud range. A substance supposed to be this same mumiai, otherwise called rock chetny, which was obtained by Lieutenant Conolly as an exudation from a fissure in a rock in Ghazni, was analysed by Mr. Piddington, who concluded, in spite of its savoury name, that it was composed of the excreta of birds, more probably of bats, mixed with salts of lime. There was no trace of bitumen or sulphur. In fact, this substance was no doubt similar, as regards its origin, to the reputed discovery of petroleum in the Madras Presidency." (Ball, page 126.) Baden Powell ("Panjáb Products, pages 22, 104"), alludes to momyái as a black substance, obtained from Kashmir, consisting "principally of clay, which, however, burns feebly and softens slightly to the flame of a lamp, giving out a peculiar empyreumatic odour." In the chapter devoted to Panjáb medicinal substances, he again alludes to momyai while speaking of a substance exhibited under that name: "This is in reality a dry mass of tar. Real momyai is said to be rarely met with; it is supposed to be of great efficacy in healing bones, and is in fact an 'osteocolla.' It is said to come from Persia, where it exudes and floats on the surface of a certain spring, where it is collected and monopolised by the Government, who sell it at a high price." Mr. Ribbentrop, Inspector General of Forests, showed the writer a substance which, in all probability, was mumea, or allied to mumea. This was procured in Chumba State, where it was found to exude from a crack on the face of a high rock.

Charas. Momyai. 352. 353. 354.

There are thus numerous allusions to substance or substances known in the bazaars of India under the name momea, but in none of the published accounts of this drug is there the slighest reference to its being a product of Indian hemp, although in the early literature of that narcotic it is repeatedly stated that a pure waxy form of charas obtained from Nepál is sold under the name of momea.

Charas from Sind. 355. Charas is collected in Sind and in Central India by causing men to run through the hemp fields. They are said to be generally clad in leather aprons to

to which the resin adheres, but in some cases are reported to have their bodies first oiled and then to run naked through the fields. In either case the charas thus collected is scraped off, and made into cakes, in which it is sold. The chief supply of charas to India comes, however, from the trans-Himálayan regions. Particulars regarding this trade will be found in a further page, but in concluding the present account of this form of the narcotic, the following extract may be here given from Mr. Baden Powell's "Panjab Products," in which, it will be seen, the substance there referred to is most probably more nearly related to chúr than to charas. It is prepared from the bhang-yielding plant :— Central India. 356. Trans-Himalaya. 357.

"There is a kind of charas called 'garda' which is much in use, and of this again there are three sorts :—'surka,' 'bhangra,' and 'khaki.' When the bhang has been gathered and placed in a store-house as soon as it is dry, persons go in with their faces covered with a thin cloth, which enables them to breathe without inhaling the dust which results from the process they perform. Next the heaps of dry bhang are covered over with a fine cloth, and the operators, putting their hands under the cloth, begin stirring about the bhang, and making hay of it. Soon a fine dust flies out, and filling the room, settles down on the surface of the cloth spread over the heaps. When all the dust has been shaken out and settled on the cloth, the cloth is itself taken out and shaken : a dust falls down, which is of the best quality, and of a reddish colour. This is collected and kneaded with a little water into a cake, and forms the best charas, which is called 'surkhai' ; more frequently the dirt that is shaken off is of a greenish tint, like the bhang itself, and this collected forms 'bhangi charas.' Lastly, the powder which adheres to the cloths, and is scraped and shaken off, forms the worst kind, called khaki." Garda or Panjab Charas. 358. Surkhai, Bhangra, and Khaki. 359.

(3.) *Bhang, or Siddhi, Sabji and Sabzi.*—Apparently the wild plant is the chief source of this form of the drug, which consists of the mature leaves and in some parts of India of the fruits also. The resin is apparently not extracted from these and sold or used in that form ; the leaves are directly employed in the manufacture of the preparations in which bhang constitutes the form of the narcotic. According to some writers the wild plant does not yield bhang (see Mr. Atkinson's "Himalayan Districts"). The comparative uniformity, throughout India, of the retail price of bhang, namely, 8 to 12 annas a seer in the provinces where duty is realized over and above the licenses to sell, and four annas (except in the North-West Provinces) where this is not the case, is of considerable importance when the disproportion in the revenue credited to Government from this article is taken into consideration. 360. Bhang

Indian Preparations from Hemp.

Forms of Indian Hemp.—As already explained there are three forms of this poisonous drug: (*a*) Ganja, the agglutinated female flowering tops and resinous exudation on these ; (*b*) Charas, a resinous substance found on the leaves, young twigs, and bark ; and (*c*) bhang or siddhi, the mature leaves, and in some parts of India the fruits also, and even the very young twigs, but not the stems. Ganja and charas are smoked, and bhang is either used in the preparation of the green intoxicating beverage, hashish, or in the manufacture of the sweetmeat known as májun (vulgarly májum). Bhang is much weaker than either ganja or charas, and by many is supposed to be much less injurious. It is sold in Bengal at from 4 to 8 or 12 annas a seer, whereas ganja and charas cost from 4 rupees to 25 rupees a seer. Bhang, being collected chiefly from the wild plant, is extensively used all over India, the bulk of the consumption entirely escaping duty. This is mainly due to the fact that it would be impracticable to hold a man responsible for the existence of a wild plant growing within a certain radius of his hut, and it would be impossible to prohibit him gathering, from such a plant, the daily quantity used by himself and family. This is precisely the state of affairs which prevails over a great part of India, and, indeed, on the lower slopes of the Himalaya and up to an altitude of 8,000 feet, the plant is often so plentiful as to be extensively used as bedding for cattle. The greatest difficulty exists, therefore, in regulating the consumption of bhang, but practically no such difficulty exists with Smoking Mixtures. 361. Hashish. 362. Majun. 363. Prices. Bedding for cattle.

with regard to ganja and charas. The last-mentioned narcotics can be produced only from the cultivated plant, and the consumption can therefore be regulated by law. The Excise Act provides that licensed persons may cultivate the plant, prepare the narcotics, and retail these to the consumer. The right to vend is sold by public auction, a person purchasing thereby the sole right, for one year, to all or so many of the shops in a district. Any person, other than a licensed dealer, having in his possession more than a very small quantity at one time is liable to prosecution and fine. This system of farming the wholesale and retail shops exists all over India, Madras being an exception to the rule, since in South India no revenue whatever is credited to Government from these drugs. The administrative arrangements which are made in each province for levying excise duties on hemp will be found under the heading Narcotics.

The Fibre—Hemp.

Fibre. 364.

The reader is referred to the account given of the cultivation of the hemp plant in a preceding page. It will there be found that a considerable amount of imformation has been given as to the early experiments made to extend the cultivation in India of Cannabis sativa as a source of fibre; a possible still further development has also, to a certain extent, been dealt with. It has been urged that the regions where the plant is grown for its narcotic, ganja, should be carefully distinguished from those where the plant may be found to form fibre. But an equally important fact remains to be investigated and thereafter clearly kept in view, namely, the age of the plant and season of the year when the fibre is at its best, in both the temperate and tropical regions of India. It cannot be disguised that the defects complained of in many of the reports on Indian hemp cultivation, against the quality of the fibre produced, are traceable to ignorance as to the period when lignification is reached by the Indian plant. The season of sowing, period of repeating, and modes of culture, practised in Europe have, apparently, been forced on the plant in India, and the suggestion is accordingly offered that the brittle character complained of, against the resulting fibre, may have been due to the fact of the plant reaching in India the mature state of the fibre at an earlier stage of its growth than in European countries. Thus, for example, it is reported that the plants experimented with on the plains of India, at Saharanpur, grew vigorously, attained a height of 12 feet, and gave every promise of proving successful. When reaped, Dr. Falconer, however, reported that "the hemp-fibre did not retain the strength or flexibility which characterise it in the Himalayas." Similar results were obtained at Agra and in various parts of Bengal. The chemistry of fibre and of the process of fibre-forming within the plant has, during recent years, reached a high development. To arrive at a definite understanding as to whether the plains of India can or cannot produce good hemp, it would be necessary to carry out a series of systematic experiments in certain selected districts in each province. The seed would have to be sown and the plant cultivated according to a uniform and pre-arranged plan. From a certain stage, say after the plants had attained a height of two feet, a certain number of the plants from each field would have to be microscopically and chemically examined once a fortnight, right through their subsequent growth, or until in each locality the period when lignification was reached by the plants had been determined. It would also be desirable, in such experiments, to make several sowings, so as to determine the best period for sowing, since much would depend upon the cultivation being so regulated that the fibre would reach maturity during the period of the year best suited to the development of fibre. Without some such experiments being performed we must remain in ignorance with hemp as with flax, whether or not the peculiar climate and soil exists in India on which either of these fibres could be produced on a commercial scale. Up to the present day, the experiments which have been made have either failed to discover such regions or were imperfectly conducted, for, with the exception of certain limited tracts of the Himalayas, no part of the plains of India can be said to have been discovered in which there is the least hope of hemp or flax cultivation becoming of much importance (*see* Remarks as to Hemp in Godavery District, No. 339.)

When mature.

Lignification.

Experiments to be performed in India.

In

In portions of the North-West Himàlaya the hemp plant has been cultivated for its fibre for a very long time. Mr. Atkinson gives a brief but practical account of this industry in his "Himàlayan Districts" (p. 799). "The possibility," says that author, "of attaining success in the cultivation of hemp in these provinces was pointed out by Dr. Roxburgh as early as 1800, and on the cession of these provinces, skilled Europeans were sent to carry on experiments in the Muradabad and Gorakhpur districts. In Garhwal and Kumaon its cultivation was encouraged, and for many years the East India Company procured a portion of its 'annual investment from the Kumaon hills in the shape of hemp.' With the abolition of the Company's trade the cultivation languished, and is now entirely dependent on the local demand, which, however, is by no means small." "The male plant yields only fibre from which the bhangela cloth of Garhwal is manufactured; also called kothla, bora, and gaji, and the ropes (sel) for bridges."

Separation of the Fibre.

Messrs. Duthie and Fuller, speaking of the hemp fibree of these provinces, say that after harvest "the stalks are then laid in water to promote a fermentation which will allow the bark to strip easily; on being taken out they are beaten with mallets to loosen the bark, which is then detached by hand in strips, and, after a second beating, breaks up into a fibre, which is made up into hanks for sale. In some places the fibre is boiled in potash and bleached before spinning. The principal things manufactured from it are hemp cloth (bhangra or bhungela), and the ropes which are used for the swing-bridges over hill-streams. The cloth makes an admirable material for sacks, and is largely used in the grain trade on the Nepal frontier; and latterly, in the export of potatoes from Kumaon. It also furnishes a large portion of the hill population with a characteristic article of clothing—a hemp blanket, worn like a plaid across the shoulders, and fastened in front with a wooden skewer."

Defects of the Indian.

It is commonly stated by European writers that the fibre from the male plant is superior to that obtained from the female. It is urged that particular care should be taken to strip the plant in dry weather; should the fibre get wet it is certain to heat and get almost totally spoiled. The method of platting the fibre into long tails, as pursued by the hill tribes of India, lessens the fibre very much, since it increases the labour in cleaning it, each hank requiring to be opened out by the hand.

Hemp Substitutes. 365.

Hemp Substitutes.—Hemp is mainly, if not entirely, employed in the manfacture of ropes, twine, and nets. As has already been urged, care must be taken, however, to distinguish the true hemp fibre from the numerons substitutes for it which are often commercially grouped with the true article. Thus, for example, we have in India Sunn-hemp (Crotalaria juncea), Bowstring-hemp (Sanseviera zeylanica), and Manilla-hemp (Musa textilis). In European commerce there are, besides these several other fibres, known as hemps, such as Canada-hemp (Apocynum cannabinum), Kentcky-hemp Jabbalpur-hemp (also Crotalaria juncea (Urtica canadensis and U. cannabina, &c.).

European hemp. 366.

European True Hemp.—Russia, even to the present day, holds the first place among hemp-producing countries, although, since Russian hemp first became an article of extensive demand, nearly every country in the world has attempted the cultivation of the plant and the manufacture of its own ropes and twine, Where this competition proved comparatively hopeless, substitutes were brought forward, and at the present day the most extensively-used fibres in the rope trade may be said to be hemp, coir (or the fibre from the outer layer of the cocoa-nut), Manilla-hemp, cotton, and sunn-hemp. Italy produces the finest hemp; France is, perhaps, next in importance, then Great Britain, Servia, Germany, and of Asiatic countries, China is reputed to produce good hemp.

Indian Foreign Trade in Hemp.

The following figures as to the value of the Indian trade in "hemp" have been extracted from the "Statement of the Trade and Navigation of British

India," regarding hemp, but the bulk of the imports of raw hemp fibre are, in all probability, Manilla hemp, and of the exports sunn-hemp :—

		Foreign Hemp Imported.	Foreign Hemp Exported.	Indian Hemp Exported.
		Rs.	Rs.	Rs.
Raw hemp. 367.	Raw Hemp			
	1881–82	1,10,875	—	5,59,112
	1882–83	1,82,993	—	4,30,325
	1883–84	1,76,765	—	6,85,316
	1884–85	2,14,118	—	5,82,679
	1885–86	1,96,052	—	9,88,825
Manufactures. 368.	Manufactured Hemp (excluding cordage.)			
	1881–82	10,179	4,182	1,409
	1882–83	27,090	8,857	3,176
	1883–84	32,570	4,548	6,510
	1884–85	41,356	150	3,129
	1885–86	42,810	323	3,205
Cordage. 369.	Cordage and rope, excluding jute, but otherwise the bulk probably Manilla Hemp and true Hemp			
	1881–82	3,22,485	24,886	3,25,178
	1882–83	4,31,693	15,586	2,84,106
	1883–84	3,90,584	11,198	4,92,068
	1884–85	3,52,413	13,076	3,53,389
	1885–86	3,24,519	7,437	3,28,320

FOREIGN Trade in Manufactured and Unmanufactured Hemp, excluding Cordage.

YEAR.	Imports. Value.	Exports and Re-exports. Value.
	Rs.	Rs.
1881–82	1,21,054	5,64,703
1882–83	2,10,083	5,42,358
1883–84	2,09,335	6,96,374
1884–85	2,55,474	5,85,958
1885–86	3,38,862	9,92,353

Imports. 370.

DETAIL of Imports, 1885–86.

Province into which Imported.	Value.	Country whence Imported.	Value.
	Rs.		Rs.
Bengal	1,33,235	United Kingdom	83,431
Bombay	1,01,600	China	1,23,474
Madras	1,183	Phillipines	2,609
Sind	2,844	Straits Settlements	17,827
		Other Countries	11,521
TOTAL Rs.	2,38,862	TOTAL Rs.	2,38,862

Exports. 371.

DETAIL of Exports, 1885–86.

Province from which Exported.	Value.	Country to which Exported.	Value.
	Rs.		Rs.
Bengal	3,11,551	United Kingdom	6,78,607
		Belgium	2,56,566
Bombay	6,31,444	Persia	11,438
		Arabia	15,698
Madras	49,358	Other Countries	30,044
TOTAL Rs.	9,92,353	TOTAL Rs.	9,92,353

It has been found impossible to give the quantities, since the raw fibre is expressed in weight, cloth in pieces, and rope in balls of various lengths and weights.

Oil.

Oil.—The seeds, when expressed, yield a pale, limpid oil. They contain of this oil from 25 to 34 per cent. This oil is at first greenish or brownish-yellow ; but the colour deepens when it is exposed to the air. The flavour is disagreeable, but the odour is mild. It is, however, said to make a very bad-smelling and deep-coloured boiled oil, and on this account it is never used in England, although extensively so in East and North Europe as a paint and varnish oil. In Russia it serves, in a great measure, the purpose of lamp-oil, but is chiefly employed in the manufacture of soft-soaps, inferior to that from linseed oil. It has a specific gravity of 0·9252 at 15°C.; it thickens at—15°C., and solidifies at—25° to—27·7C. It disolves in boiling hot water and in 30 parts of cold alcohol.

Hemp seed oil. 372.

Medicine.

Medicine. 373.

Medicine.—The various forms of the drug have already been described, namely, bhang, ganja and charas. Ganja, or the dried flowering female tops, constitute the officinal parts in European pharmacy. From these an alcoholic extract is prepared, known as Extractum Cannabis Indicæ, and from this a Tincture is also made.—The use of Indian-hemp in European practice has greatly decreased of late years, owing to a feeling of insecurity as to the quality of the article. It is commonly recorded that no reliance can be put upon the uniformity in strength, The writer, at a meeting of the Royal Pharmaceutical Society of Great Britian, recently expressed the opinion that the heavy fiscal restrictions now imposed on Bengal ganja had, in all probability, diverted the export trade from Bengal to Bombay, so that, instead of the carefully-cultivated Bengal article finding its way to Europe, the much inferior, but infinitively cheaper, ganja of Bombay and the Central Provinces was, in all probability, that which was now used in Eropean Pharmacy. The "Chemist and Druggist," commenting on this subject shortly after, recomended the suggestion as worthy of attention, and added:—"The price of Bengal ganja may be prohibitive, but the whole subject should be considered by authorities." There would seem little doubt that the high reputation of the drug once enjoyed might be recovered by greater care in selecting the article, but there is, perhaps, no other commodity in India that is produced in a larger number of forms and qualities, or which, in the hands of the retail dealer, is subjected to a greater degree of adulteration. The only guarantee an exporter can have is to purchase his ganja direct from the Government golas of Bengal, not even allowing the article to pass through the hands of a wholsale ganja-dealer or "middle-man" of any kind. If the article be shipped under a pemit direct from the gola it is believed little complaint would be raised as to the uniformity in strength, but none but that which is registetered as of the first quality should be purcahsed for medinal purposes. From what the writer has been able to learn, it would be even preferable to use for European Pharmacy the chur or the dust obtained on packing and handling round ganja rather than round ganja itself; flat ganja should be resorted to with caution, and charas, or momea, should never be employed, nor round ganja in which ripe fruits are found with the flower heads.

Indian hemp. Extract Indian hemp 374.

Tincture. 375.

Chur or round Ganja best suited for Pharmacy. Flat Ganja and Chara should be avoided.

Medicinal Properties and uses of Indian Hemp--

The Pharmacopœa of India, describes the drug as primarily stimulant, and secondarily anodyne, sedative, and antispasmodic. It is also said to be narcotic, dieuretic, and parturifacient. It has been used with advantage in tetanus, hydrophobia, delirum tremens, ebrietas, infantile convulsions, various forms of neuralgia, and other nervous affections, It has also been employed in cholera, menorrhagia, and uterine hœmorrhage, rheumatism, hay fever, asthma, cardiac, functional derangement, and skin diseases attended with much pain, and pruritus. In lingering and protracted labours, depending upon atony of the uterus, it has been employed with a view of inducing uterine contractions.

It is admitted by most Indian physicians to be of special merit in the treatment of tetanus and cholera, and has not the injurious after-effects (constipation and loss of appetite) which but too frequently result from the use of opium. Its action is, however, very similar to that of opium, and it is accordingly stated that a habitual opium-eater may take large quantities of hemp without injurious consequences.

Sir William O'Shaughnessy was the first European writer to draw prominent attention to the peculiar properties and actions of the hemp-narcotics. He experimented with these in Calcutta and published his results. The reader is

referred to his "Bengal Dispensatory" and to a "Memoir on the preparations of Indian hemp," in the Transactions of Medical and Physical Society of Calcutta for 1839, and to two papers in the "Journal of the Asiatic Society," Vol. VIII., of the same year. Shortly after the appearance of these most exhaustive accounts, the drug began to be experimented with in Europe.

Ainslie, in his "Materia Indica," 2nd Vol., gives an interesting account of the drug, and, according to him, the majun of South India, in addition to the ingredients of the Bengal article, contains datura and nuxvomica. Dr. Stocks says that the best form of bhang met with in Sind is that known as bubakai, from the town of Bubak near Lake Manchhar. He further adds, that the majum of Sind is made up of some 20 to 30 different ingredients, of which datura and opium are frequent. In some parts of India a beer is brewed with bhang, and this, together with bhang itself, majum and other preparations, are often employed in Native pharmacy.

Professor Christison published the following valuable remarks, derived from his personal experience with this drug:—"I have for some years," he observes, "used a very good alcoholic extract, sent to me from Calcutta 20 years ago, and still as powerful as ever to subdue pain, obtain sleep, and put an end to spasm in circumstances under which morphia either did not suit or was objected to by the patient, and after wide experience with it I am quite satisfied that it is an excellent substitute for it, if given in sufficient doses The difficulty is, to be always sure of the quality of the extract, or rather of the ganja from which the extract is obtained. I have known two grains of my alcoholic extract, given in the form of tincture, put an end, promptly and permanently, to the agonising pain caused by bilary calculus impacted in ducts; and there can be no more unequivocal test than this of the potency of an anodyne. I have long been convinced, and new experience confirms the conviction, that for energy, certainty, and convenience, Indian hemp is the next anodyne hypnotic and anti-spasmodic to opium and its derivatives, and often equal to it." Dr. Christison considers that a well-prepared alcoholic extract is the best of all forms for use, but it requires to be prepared from ganja, not too old, collected in the right district, and at the right season. The ordinary resin (charas) is generally very impure and untrustworthy." (Pharm., India).

Uniformity in quality.

The early writers express almost the same opinions as were arrived at by the modern European physicians. According to the author of "Makhzan":—"The leaves make a good snuff for deterging the brain; their juice applied to the head removes dandriff and vermin; dropped into the ear it allays pain and destroys worms; it checks the discharge in diarrhœa and gonorrhœa, and is diuretic." The powder of the leaves is applied externally to fresh wounds and sores, and is used to promote granulation; a poultice of the whole plant is applied to local inflammations, erysipelas, neuralgia, &c. The dose of the leaves is 48 grains when administered internally." (Makhzan, Article Kinnab, *see* Dr. W. Dymock, Mat. Med. West India).

The medicinal properties of hemp, in various forms, are the subject of some interesting notes by Mirza Abdul Russac:—"It produces a ravenous appetite and constipation, arrests the secretions, except that of the liver, excites wild imagining, a sensation of ascending, with forgetfulness of all that happens during its use, and such mental exaltation, that the beholders attribute it to supernatural inspiration.

Of its utility as an external application in the form of a poultice, with milk, in relieving hœmorrhoids, and internally in gonorrhœa, to the extent of a quarter drachm of bhang." He further states that the habitual smokers of ganja generally die of diseases of the lungs, dropsy, and anasarca; so do the eaters of majun and smokers of siddhi, but at a later period. The inexperienced, on first taking it, are often senseless for a day, some go mad, others have been known to die.

Leaves. 376.

Dr. U. C. Dutt says, that according to the Sanskrit writers:—"The leaves of Cannabis sativa are said to be purified by being boiled in milk before use. They are regarded as heating, digestive, astringent, and narcotic." "In sleeplessness, the powder of the fried leaves is given in suitable doses for inducing sleep and removing pain."

Dysentery.

Special Opinions.—§ "Used as anodyne, antispasmodic, diruetic; leaves may be employed in dose of 20 grains" (Assistant Surgeon, Nehal Sing, Shaharanpur). "During the last twelve months I have used Cannabis sativa with great success in the treatment of acute dysentery; similar results were obtained by other medical

medical officers of this station, who tried it at my request. The dose was, of the tincture, 15 or 20 m., three times a day (Surgeon S. F. Rennie, Cawnpore.) "I have found a poultice of the bruised fresh leaves, slightly warmed, very useful in affections of the eye, attended with photophobea. Natives also use the poultice in piles" (Assistant Surgeon Bhagwan Dass (2nd Punjab). "The resin collected from the leaves and flowers in Turkestan is called Nasha, and this ought to be the Charas of the trade, but it is terribly adulterated. The plant is called in Turkestan kandir, and the oil kandir yak. The oil extracted from the seed is in Kashmir considered as a valuable remedy, applied by rubbing in rheumatism" (Surgeon-Major F. E. T. Aitchison, Simla). "Used in the form of 'sidhi' in small quantities, it is a very good stomachic tonic, useful in atonic dyspepsia and diarrhœa. In large quantities, exhilarant at first, depressing subsequently. Long continued use of ganja is a prominent cause of insanity" (Civil Surgeon D. Basu, Faridpur). "Used to produce sleep in certain cases in which opium is contra-indicated. It does not induce nausea, constipation, or headache as opium does. Valuable as a remedy for sick headache, and especially in preventing such attacks. It removes the nervous effects of a malady. Useful in malarial, periodical neuralgias. Valuable in the treatment of the sleeplessness and restlessness of acute mania, in whooping-cough, and in asthma, in dysuria, and in relieving pain in dysmenorrhœa" (Dr. E. G. Russell, Superintendent, Asylums, at Presidency General Hospital, Calcutta). "Commonly used as a narcotic; a few grains of the leaves called siddhi, rubbed in with cardamon and other spices, to allay pain; taken as a drink habitually, by many, for intoxicating purposes; may be used as an anodyne; it increases appetite; is an aphrodisiac; and increases the activity of the brain, producing better flow of thoughts, and deep meditation, but often wild reveries and causeless laughter. A small quantity of the leaves, mixed with other drugs and spices, forms an useful compound in diarrhœa and indigestion of children" (Assistant Surgeon Shib Chunder Bhattacharji, Chanda, Central Povinces). "The leaves, which are known as bhang, are used to check diarrhœa; an extract is prepared from them; it is made into confection, and used for narcotic purposes" (Surgeon-Major Robb, Civil Surgeon Ahmadabad). "Used for asthma and in tetanus, dose ¼ to 2 grains, with sugar well fried in ghi and mixed with black pepper, given, in cases of chronic diarrhœa, with poppy seeds in dysentery, with asafœtida in hysteria" (Surgeon W. Barren, Bhuj, Cutch). "Very often used by natives in some parts of this Presidency as an aphrodisiac, and, I believe, in some cases, successfully" in the form of 'Majun' *i.e.*, a kind of pill-mass containing various drugs. (Surgeon D. N. Parakh, Bombay). "The leaves, made into a poultice, used in orchitis; also dried leaves, warmed, and used for formentation" (Civil Surgeon S. M. Shircore, Murshedabad). "Used frequently by all hospital assistants, particularly for asthma and other paroxymal affections. In cases of chronic colic I have found the extract in one-grain doses with ¼ grain of Ipecac. to produce wonderful effects" (Doyal Chunder Shome, Campbell Medical School, Sealdah, Calcutta). "More commonly used in this country to produce intoxicating effects, than for its medicinal properties in smaller doses" (Dr. G. Price, Civil Surgeon, Shahabad). "It is also used in the form of tincture for checking ague fits, and is employed by native physicians in the form of electuary as an aphrodisiac, in cases of impotence, spermatorrhœa, and incontinence of urine. Taken in the form of bhang it acts on the kidneys as a powerful diuretic, and on the liver as a mild cholagogue" (Civil Surgeon F. H. Thornton, B.A., M.B., Monghir). "Dried tender leaves and flowering tops with sugar, black pepper powder, and with or without opium, proves highly beneficial in dysentery" (Civil Surgeon E. W. Savinge, Rajamundry, Godaveri District).

Affections of the eye.
Piles.
Nasha. 377.
Oil used in rheumatism.
Acute mania.
Hysteria.
Orchitis.
Asthma.
Chronic cholic.
Ague fits.
Impotence.

Chemical Composition.—"The most interesting constituents of hemp, from a medical point of view, are the resin and volatile oil.

CHEMICAL COMPOSITION.

"The former was first obtained in a state of comparative purity by T. and H. Smith, in 1846. It is a brown, amorphous, solid, burning with a bright white flame and leaving no ash. It has a very potent action when taken internally, two-thirds of a grain acting as a powerful narcotic, and one grain producing complete intoxication. From the experiments of Messrs. Smith it seems impossiple to doubt that to this resin the energetic effects of Canabis are mainly due.

"When water is repeatedly distilled from considerable quantities of hemp, fresh lots of the latter being used for each operation, a volatile oil, lighter than water, is obtained together with ammonia. This oil, according to the observa-

tions

tions of Personne (1857) is amber-coloured, and has an oppressive, hemp-like smell. It sometimes deposits an abundance of small crystals. With due precautions, it may be separated into two bodies, the one of which, named by Cannabene. 378. Parsonne Cannabene, is liquid and colourless, with the formula $C_{18}H_{20}$, the other, which is called Hydride of Cannabene, is a solid, separating from alcohol in platy crystals, to which Personne assigns formula $C_{18}H_{22}$. He asserts that Cannabene has indubitably a physiological action, and even claims it as the sole active principle of hemp. Its vapour, he states, to produce, when breathed, a singular sensation of shuddering, a desire of locomotion, followed by prostration, and sometimes syncope. Bohling, in 1840, observed similar effects from the oil which he obtained from the fresh herb, just after flowering, to the extent of 0·3 per cent.

It remains to be proved whether an alkaloid is present in hemp, as suggested by Preobraschensky.

"The other constituents of hemp are those commonly occurring in other plants. The leaves yield nearly 20 per cent. of ash.

"As to the resin of Indian hemp, Bolas and Francis, in treating with nitric acid, converted it into Oxycannabin, $C_{20}H_{20}N_2O_7$. This interesting substance may, they say, be obtained in large prisms from a solution in methylic alcohol. It melts at 176°C., and then evaporates without decomposition; it is neutral. One of us (F.) has endeavoured to obtain it from purified resin of charas, but without success" (Fluck. and Hanb., Pharmacog., page 549).

Dr. Dymock (in his 2nd Ed. of the Materia Medica of Western India) goes into considerable detail on the chemistriy of this drug. Preobraschensky discovered in China haschisch, a volatile alkaloid, which he believed to be identical with nicotine. Dragendroff and Marquiss suggested that this may have been derived from tobacco mixed with the beverage. Siebold and Bradbury, while concurring with this explanation, announce their discovery of an alkaloid perfectly distinct from nicotine; they give it the name of Cannabine. Dr. Hay, some time before, published his conviction that hemp contained several alkaloids, the principal one being a substance he named Tetano-cannabine. More recently to all these published results of the chemical investigation of the narcotic resin of Cannabis sativa, Drs. Warden and Waddel, of Calcutta, have failed to discover the principle alluded to by Dr. Hay. But they obtained, by the destructive distillation of the alcoholic extract, an amber coloured oil. "This oil had a mildly empyreumatic odour, which was distinctly tobacco-like. Its taste was warm, aromatic, and somewhat terebinthinate. The oil contained phenol, ammonia, and several other of the usual products of destructive distillation.

"The nicotine-like principle contained in this oil appeared to be an alkaloid. It formed salts, which evolved a strong nicotine-like odour when acted on by alkalies. But physiologically it was found to be inert, and therefore was evidently not identical with nicotine." (Ind. Med. Gaz., Dec. 1884.)

Food.

Food. 379. *Food.*—Messrs. Duthie and Fuller, writing about the Himalayan tracts within the North-Western Provinces, say that the seed is not uncommonly roasted and eaten by the hill men, and that after the oil is expressed, the oil-cake is given to their cattle. Dr. Stewart writes, that on the Sutlej the seeds are roasted and eaten in small quantites with wheat.

Domestic and Industrial Uses.

Domestic. 380. *Cannabic Composition.*—"This material for architectural decoration is described by Mr. B. Albans to have a basis of hemp amalgamated with resinous substances, carefully prepared and worked into sheets of large dimensions. Ornaments in high relief, and with great sharpness of detail, are obtained by pressure of metal discs, and they are of less than half the weight of papier maché ornaments, sufficiently thin and elastic to be adapted to wall surfaces, bearing blows of the hammer and resisting all ordinary actions of heat and cold without change of form. Its weather qualities have been severely tried in Europe, as for coverings of roofs, &c., remaining exposed without injury.

This composition is of Italian origin, and in Italy it has been employed for panels, frames, and centres. It is well fitted to receive bronze, paint, or varnish; the material is so hard as to allow gold to be burnished after gilding the ornaments made of it" (Ure., I., 611).

SALE OF BILLS ON INDIA.

CORRESPONDENCE

BETWEEN THE

VICEROY OF INDIA

AND THE

SECRETARY OF STATE FOR INDIA.

Presented to both Houses of Parliament by Command of Her Majesty.

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1893.

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CORRESPONDENCE

BETWEEN THE

VICEROY OF INDIA

AND THE

SECRETARY OF STATE FOR INDIA.

No. 1.

TELEGRAM from the VICEROY to the SECRETARY OF STATE,
30th June 1893.

Apprehension and uneasiness have been caused in commercial circles by your sales of bills this week at lower rate than 1*s.* 4*d.* the rupee. If you think it inexpedient to fix a minimum, we would suggest that moderate amount should be offered at weekly sales, and that extra allotments either should be refused altogether, or granted only on such terms as would make their cost equivalent to what would be incurred by exporting gold to be exchanged for rupees at Indian mints.

No. 2.

TELEGRAM from the SECRETARY OF STATE to the VICEROY,
30th June 1893.

I think it inexpedient to fix a minimum rate for exchange. The proposals of the Committee, accepted by your Government, were to stop free coinage, and, in order to prevent an assumed convulsion of trade through too rapid rise, to allow gold to be received at 1*s.* 4*d.* per rupee. I propose gradually to reduce drawings, but action must depend on requirements of Home Treasury.

No. 3.

TELEGRAM from the VICEROY to the SECRETARY OF STATE,
1st July 1893.

Your telegram of 30th June. Council Bills. Have you decided to stop extra allotments? There is a strong feeling against them in India. We think it desirable that gold standard should be made effective as soon as possible, and we see nothing in Report of Committee by which we are precluded from doing so, provided that limit of 1*s.* 4*d.* per rupee is maintained.

No. 4.

TELEGRAM from the SECRETARY OF STATE to the VICEROY,
4th July 1893.

In reply to your telegram of the 1st, about bills. Considering the requirements of the Home Treasury, which will average 52 lakhs a week at 16 pence per rupee, I cannot undertake the risk of holding out for that rate, and I must exercise discretion as to the manner in which bills shall be sold. Though silver will no longer compete with bills on India, gold may compete.

i 79680. Wt. P. 1577.

No. 5.

TELEGRAM from the VICEROY to the SECRETARY OF STATE.
7th July 1893.

In reply to your telegram of the 4th about bills. It is fully recognised that in the sale of bills you must exercise your discretion and be guided by circumstances. In the present unsettled condition of things, however, the market appears unable to settle upon a suitable or indeed upon any rate of exchange, and it is inclined to follow your lead. We strongly recommend that you should, for the next few months, sell bills in the manner which, in your judgment, will give to exchange the maximum possible amount of stability. Some months must elapse before the closing of the mints will produce its effect on exchange, and it is very desirable, in the meantime, that fluctuation should be prevented as far as is possible.

No. 6.

TELEGRAM from the VICEROY to the SECRETARY OF STATE.
20th August 1893.

Following telegram received from Bombay Chamber of Commerce. "At a meeting "of Committee specially held to-day to consider sale of telegraphic transfers made "yesterday, it was resolved to respectfully address Government deprecating the action "of the Secretary of State for India in selling at 1*s.* 3¼*d.* the rupee. The sale has "shaken confidence of public in power of Government to effect object of recent "currency legislation, and, in the opinion of Committee, has been made at inopportune "moment, before Indian export season has opened, and therefore before Government "policy has had fair trial." Secretary and Treasurer of Bank of Bengal describe feeling at Calcutta as extremely strong in all branches of business. In letter on same subject President, Indian Currency Association, says the result of this sale has created nothing short of panic in commercial circles at Calcutta, Bombay, and Madras. He urges you should meet your wants to some extent by permanent loans, and you should refrain from selling bills until you can do so at 1*s.* 4*d.* per rupee. We fully recognise objections to raising a loan, especially over funds available in India; also objections to fixing minimum for bills, but state of affairs in India at the present time is exceptional altogether, and there is much to be said in favour of fixing a minimum to be publicly announced, below which you would undertake not to sell until December, and of borrowing in England some two millions sterling, and announcing that drawings this year would be reduced by that amount. If you think that until December your requirements cannot be met by suggested loan, if minimum is declared at 1*s.* 4*d.* per rupee, you might fix lower minimum, announcing at the same time intention to raise it gradually to 1*s.* 4*d.* per rupee. We are strongly of opinion that, in any circumstances, it will be advisable that you should refuse to grant special allotments between weekly drawings at a lower rate than 1*s.* 4*d.* per rupee. We are satisfied that course as above stated would have a good effect in India, should you find it practicable to adopt our suggestion.

No. 7.

TELEGRAM from the SECRETARY OF STATE to the VICEROY.
23rd August 1893.

I have received your telegram of the 20th August about bills. I am afraid that you do not realise the position. If no bills should be sold before December, it will be necessary to borrow 5,000,000*l.* at a time when the market is very unfavourable; and, in order to meet the further requirements of the Home Treasury up to the 5th of January, I shall be obliged in December to sell 99 lakhs each week at 1*s.* 4*d.* per rupee. Therefore I cannot announce a minimum rate. The object of the recent currency legislation was to arrest the further fall in exchange which appeared to be imminent at that time.

No. 8.

Telegram from the VICEROY to the SECRETARY OF STATE.
25th August 1893.

Your telegram of 23rd August. We are of opinion that the result of publicly announcing a low minimum, say 1*s.* 3*d.* per rupee, would not be that no bills would be sold, but that, on the contrary, you would sell in the next few months more than there is any prospect of your selling under existing arrangements. It would not be necessary therefore to borrow nearly so much as 5,000,000*l.* if you adopt this suggestion. Existing uncertainty causing the mercantile community heavy loss, and hampering trade generally, thereby reducing demand for your bills.

INDIA OFFICE (SUPERANNUATIONS).

RETURN to an Address of the Honourable The House of Commons, dated 14 September 1893 ;—*for*,

"RETURN showing (1) the Name of every Official in receipt of SUPERANNUATION from IMPERIAL or INDIAN REVENUES employed in the Office of the Secretary of State for India in Council; (2) the present Age of such Official; (3) the Age at which Superannuation was Granted; (4) the Date of such Superannuation; (5) the Amount of Superannuation charged upon the British Exchequer; (6) the Amount charged upon the Indian Revenues; (7) the Amount of Salary received from present Position; and (8) the Total Sum received from all Public Sources, in the following Form :—

1. Name of Official employed in the Office of the Secretary of State for India in Council.	2. Age at present.	3. Age when Super-annuated.	4. Date of Super-annuation.	5. Amount of Pension charged upon the British Exchequer.	6. Amount of Pension charged upon the Indian Revenues.	7. Amount of Salary received from present Position.	8. Total Sum received from all Public Sources.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.

India Office,
2 November 1893.

ARTHUR GODLEY,
Under Secretary of State for India.

(*Mr. Walter M'Laren.*)

Ordered, by The House of Commons, *to be Printed*,
3 *November* 1893.

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RETURN showing (1) the Name of every Official in receipt of SUPERANNUATION from Council; (2) the present Age of such Official; (3) the Age at which Superannuation was upon the British Exchequer; (6) the Amount charged upon the Indian Revenues; (7) the Public Sources.

Name of Official employed in the Office of the Secretary of State for India in Council.	Age at present.	Age when Super-annuated.	Date of Super-annuation.	Amount of Pension charged upon the British Exchequer.
				£. s. d.
Members of the Council of India.				
Major General Sir Henry Creswicke Rawlinson, Bart., G.C.B., LL.D., D.C.L.	83	45	5 Mar. 1856	—
General Sir Peter Stark Lumsden, G.C.B., C.S.I.	63	56	10 Dec. 1885	—
Sir Robert Henry Davies, K.C.S.I., C.I.E.	69	53	18 June 1878	—
Sir John Strachey, G.C.S.I., C.I.E.	70	53	14 Dec. 1876	—
General Sir Donald Martin Stewart, Bart., G.C.B., G.C.S.I., C.I.E.	69	61	28 Nov. 1885	—
Major General Sir Owen Tudor Burne, K.C.S.I., C.I.E.	56	52	16 Oct. 1889	133 – –
Sir Alexander John Arbuthnot, K.C.S.I., C.I.E.	70	52	29 Oct. 1874	—
Sir James Braithwaite Peile, K.C.S.I.	60	54	12 Nov. 1887	—
Sir Alfred Comyns Lyall, K.C.B., K.C.I.E.	58	52	2 Dec. „	—
Sir Charles Arthur Turner, K.C.I.E.	60	52	1 July 1885	—
General Sir Archibald Alison, Bart., G.C.B.	67	67	21 Jan. 1893	1,079 – –
Secretaries of Departments.				
Major General Oliver Richardson Newmarch, C.S.I.	59	53	1 Nov. 1887	—
Sir Charles Edward Bernard, K.C.S.I.	55	50	8 Mar. 1888	—
Sir Steuart Colvin Bayley, K.C.S.I., C.I.E.	56	54	20 Dec. 1890	—
Special Assistant and Visitor to India Museum.				
Sir George Christopher Molesworth Birdwood, K.C.I.E., C.S.I., M.D.	60	35	1 Sept. 1868	—
Government Director of Indian Railway Companies.				
Lieutenant General Sir Edward Charles Sparshott Williams, R.E., K.C.I.E.	62	55	9 Nov. 1886	—
President of Medical Board.				
Surgeon General Sir Joseph Fayrer, K.C.S.I., M.D., F.R.S.	68	49	1 Dec. 1874	—
Member of Medical Board.				
Brigade Surgeon Lieutenant Colonel Kenneth McLeod, M.D.	53	51	16 April 1892	—
Legal Adviser and Solicitor to the Secretary of State.				
Arthur Wilson, Esq.	56	54	21 April „	—
Librarian.				
Charles Henry Tawney, Esq., C.I.E.	55	55	27 Dec. „	—
Clerk, Indo-European Telegraph Department.				
Henry John Andrews, Esq.	45	43	1 July 1891	—
Member of Committee for Valuation of Military Equipments.				
Captain Arthur Briscoe Hawes	61	25	23 Oct. 1858	—
Superintendent of the India Store Dep6t.				
Lieutenant Colonel Donatus O'Brien, R.E.	49	45	17 Dec. 1889	250 – –
Assistant Superintendent of the India Store Dep6t.				
Major David Charles Courtney, R.E.	48	40	15 June 1885	100 – –
Examiner of Medical Stores, India Store Dep6t.				
Surgeon Major Francis Nottidge Macnamara	62	44	14 Feb. 1876	—
Examiner of Surgical Instruments, India Store Dep6t.				
Surgeon Major Nottidge Charles Macnamara	61	43	15 April „	—
Supervisors, Second Grade, India Store Dep6t.				
Sub-Conductor William Edmondson Phelps	41	31	17 June 1884	—
Sub-Conductor William Wickham	37	33	28 Feb. 1890	8 14 –
Assistant Examiners of Stores, India Store Dep6t.				
Mr. Stephen Christoper Wright	45	39	20 July 1887	45 12 6
Mr. Thomas Kerr	47	43	1 Nov. 1889	27 7 6

Note.—For the purpose of this Return the words "Superannuation" and "Pension" have been held to include Annuities Officers have paid; also Military Pay and Colonel's Allowance drawn by Officers who have not retired. In respect of the latter, Superannuation.

IMPERIAL or INDIAN REVENUES employed in the Office of the Secretary of State for India in Granted; (4) the Date of such Superannuation; (5) the Amount of Superannuation charged Amount of Salary received from present Position; and (8) the Total Sum received from all

Amount of Pension charged upon the Indian Revenues.	Amount of Salary received from present Position.	Total Sum received from all Public Sources.	
£. s. d.	£. s. d.	£. s. d.	
365 – –	1,200 – –	1,565 – –	
(1) 1,124 17 5	1,200 – –	2,324 17 5	(1) Indian Military Pay at 25*s.* a day, and Colonel's Allowance at 668*l.* 12*s.* 5*d.* a year.
(2) 1,000 – –	1,200 – –	2,200 – –	(2) Annuity from the Bengal Civil Service Annuity Fund.
(3) 1,000 – –	1,200 – –	2,200 – –	(3) Annuity from the Bengal Civil Service Annuity Fund.
(4) 1,124 17 5	1,200 – –	2,324 17 5	(4) Indian Military Pay at 25*s.* a day, and Colonel's Allowance at 668*l.* 12*s.* 5*d.* a year.
(5) 367 – –	1,200 – –	1,700 – –	(5) £.500 a year, the half-pay of a Major General.
(6) 1,000 – –	1,200 – –	2,200 – –	(6) Annuity from the Madras Civil Service Annuity Fund.
(7) 1,000 – –	1,200 – –	2,200 – –	(7) Annuity from the Bombay Civil Service Annuity Fund.
(8) 1,000 – –	1,200 – –	2,200 – –	(8) Annuity from the Bengal Civil Service Annuity Fund.
1,500 – –	1,200 – –	2,700 – –	
121 – –	1,200 – –	2,400 – –	
783 5 –	1,200 – –	1,983 5 –	
(9) 1,000 – –	1,200 – –	2,200 – –	(9) Annuity from the Bengal Civil Service Annuity Fund.
(10) 1,000 – –	1,200 – –	2,200 – –	(10) Annuity from the Bengal Civil Service Annuity Fund.
270 – –	800 – –	1,070 – –	
(11) 1,124 17 5	1,000 – –	2,124 17 5	(11) Indian Military Pay at 25*s.* a day, and Colonel's Allowance at 668*l.* 12*s.* 5*d.* a year.
365 – – / (12) 300 – –	600 – –	1,265 – –	(12) Annuity from the Bengal Medical Retiring Fund.
500 – –	300 – –	800 – –	
1,200 – –	1,200 – –	2,400 – –	
437 10 –	600 – –	1,037 10 –	
148 7 8	100 – –	248 7 8	
127 15 –	700 – –	827 15 –	
—	800 – –	1,050 – –	
—	700 – –	800 – –	
292 – – / (13) 300 – –	300 – –	892 – –	(13) Annuity from the Bengal Medical Retiring Fund.
292 – – / (14) 300 – –	50 – –	642 – –	(14) Annuity from the Bengal Medical Retiring Fund.
55 – –	290 – –	345 – –	
49 6 –	260 – –	318 – –	
—	155 – –	200 12 6	
—	155 – –	182 7 6	

from the Civil Service Annuity Funds of the three Presidencies and from the Bengal Medical Retiring Fund, for which the the date at which they were either promoted to Colonel's Allowance, or to their present rank, is recorded as the date of their

E. R. Cave-Browne,
Accountant General.

RETURN showing (1) the Name of every Official in receipt of SUPERANNUATION from Council; (2) the present Age of such Official; (3) the Age at which Superannuation was upon the British Exchequer; (6) the Amount charged upon the Indian Revenues; (7) the Public Sources.

Name of Official employed in the Office of the Secretary of State for India in Council.	Age at present.	Age when Super-annuated.	Date of Super-annuation.	Amount of Pension charged upon the British Exchequer.
				£. s. d.
Members of the Council of India.				
Major General Sir Henry Creswicke Rawlinson, Bart., G.C.B., LL.D., D.C.L.	83	45	5 Mar. 1856	—
General Sir Peter Stark Lumsden, G.C.B., C.S.I.	63	56	10 Dec. 1885	—
Sir Robert Henry Davies, K.C.S.I., C.I.E.	69	53	18 June 1878	—
Sir John Strachey, G.C.S.I., C.I.E.	70	53	14 Dec. 1876	—
General Sir Donald Martin Stewart, Bart., G.C.B., G.C.S.I., C.I.E.	69	61	28 Nov. 1885	—
Major General Sir Owen Tudor Burne, K.C.S.I., C.I.E.	56	52	16 Oct. 1889	133 – –
Sir Alexander John Arbuthnot, K.C.S.I., C.I.E.	70	52	29 Oct. 1874	—
Sir James Braithwaite Peile, K.C.S.I.	60	54	12 Nov. 1887	—
Sir Alfred Comyns Lyall, K.C.B., K.C.I.E.	58	52	2 Dec. „	—
Sir Charles Arthur Turner, K.C.I.E.	60	52	1 July 1885	—
General Sir Archibald Alison, Bart., G.C.B.	67	67	21 Jan. 1893	1,079 – –
Secretaries of Departments.				
Major General Oliver Richardson Newmarch, C.S.I.	59	53	1 Nov. 1887	—
Sir Charles Edward Bernard, K.C.S.I.	55	50	8 Mar. 1888	—
Sir Steuart Colvin Bayley, K.C.S.I., C.I.E.	56	54	20 Dec. 1890	—
Special Assistant and Visitor to India Museum.				
Sir George Christopher Molesworth Birdwood, K.C.I.E., C.S.I., M.D.	60	35	1 Sept. 1868	—
Government Director of Indian Railway Companies.				
Lieutenant General Sir Edward Charles Sparshott Williams, R.E., K.C.I.E.	62	55	9 Nov. 1886	—
President of Medical Board.				
Surgeon General Sir Joseph Fayrer, K.C.S.I., M.D., F.R.S.	68	49	1 Dec. 1874	—
Member of Medical Board.				
Brigade Surgeon Lieutenant Colonel Kenneth McLeod, M.D.	53	51	16 April 1892	—
Legal Adviser and Solicitor to the Secretary of State.				
Arthur Wilson, Esq.	56	54	21 April „	—
Librarian.				
Charles Henry Tawney, Esq., C.I.E.	55	55	27 Dec. „	—
Clerk, Indo-European Telegraph Department.				
Henry John Andrews, Esq.	45	43	1 July 1891	—
Member of Committee for Valuation of Military Equipments.				
Captain Arthur Briscoe Hawes	61	25	23 Oct. 1858	—
Superintendent of the India Store Depôt.				
Lieutenant Colonel Donatus O'Brien, R.E.	49	45	17 Dec. 1889	250 – –
Assistant Superintendent of the India Store Depôt.				
Major David Charles Courtney, R.E.	48	40	15 June 1885	100 – –
Examiner of Medical Stores, India Store Depôt.				
Surgeon Major Francis Nottidge Macnamara	62	44	14 Feb. 1876	—
Examiner of Surgical Instruments, India Store Depôt.				
Surgeon Major Nottidge Charles Macnamara	61	43	15 April „	—
Supervisors, Second Grade, India Store Depôt.				
Sub-Conductor William Edmondson Phelps	41	31	17 June 1884	—
Sub-Conductor William Wickham	37	33	28 Feb. 1890	8 14 –
Assistant Examiners of Stores, India Store Depôt.				
Mr. Stephen Christoper Wright	45	39	20 July 1887	45 12 6
Mr. Thomas Kerr	47	43	1 Nov. 1889	27 7 6

Note.—For the purpose of this Return the words "Superannuation" and "Pension" have been held to include Annuities Officers have paid; also Military Pay and Colonel's Allowance drawn by Officers who have not retired. In respect of the latter, Superannuation.

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Amount of Pension charged upon the Indian Revenues.	Amount of Salary received from present Position.	Total Sum received from all Public Sources.	
£. s. d.	£. s. d.	£. s. d.	
365 – –	1,200 – –	1,565 – –	
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(3) 1,000 – –	1,200 – –	2,200 – –	(3) Annuity from the Bengal Civil Service Annuity Fund.
(4) 1,124 17 5	1,200 – –	2,324 17 5	(4) Indian Military Pay at 25*s.* a day, and Colonel's Allowance at 668*l.* 12*s.* 5*d.* a year.
(5) 367 – –	1,200 – –	1,700 – –	(5) £.500 a year, the half-pay of a Major General.
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1,500 – –	1,200 – –	2,700 – –	
121 – –	1,200 – –	2,400 – –	
783 5 –	1,200 – –	1,983 5 –	
(9) 1,000 – –	1,200 – –	2,200 – –	(9) Annuity from the Bengal Civil Service Annuity Fund.
(10) 1,000 – –	1,200 – –	2,200 – –	(10) Annuity from the Bengal Civil Service Annuity Fund.
270 – –	800 – –	1,070 – –	
(11) 1,124 17 5	1,000 – –	2,124 17 5	(11) Indian Military Pay at 25*s.* a day, and Colonel's Allowance at 668*l.* 12*s.* 5*d.* a year.
365 – – / (12) 300 – –	600 – –	1,265 – –	(12) Annuity from the Bengal Medical Retiring Fund.
500 – –	300 – –	800 – –	
1,200 – –	1,200 – –	2,400 – –	
437 10 –	600 – –	1,037 10 –	
148 7 8	100 – –	248 7 8	
127 15 –	700 – –	827 15 –	
—	800 – –	1,050 – –	
—	700 – –	800 – –	
292 – – / (13) 300 – –	300 – –	892 – –	(13) Annuity from the Bengal Medical Retiring Fund.
292 – – / (14) 300 – –	50 – –	642 – –	(14) Annuity from the Bengal Medical Retiring Fund.
55 – –	290 – –	345 – –	
49 6 –	260 – –	318 – –	
—	155 – –	200 12 6	
—	155 – –	182 7 6	

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E. R. Cave-Browne,
Accountant General.

INDIA OFFICE (SUPERANNUATIONS).

RETURN showing the Name of every Official in receipt of SUPERANNUATION from IMPERIAL or INDIAN REVENUES employed in the Office of the Secretary of State for India in Council; the present Age of such Official; the Age at which Superannuation was Granted; the Date of such Superannuation; the Amount of Superannuation charged upon the British Exchequer; the Amount charged upon the Indian Revenues; the Amount of Salary received from present Position; and the Total Sum received from all Public Sources.

(*Mr. Walter M'Laren.*)

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3 *November* 1893.

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434. *Under* 1 *oz.*

REPORT

ON

SANITARY MEASURES IN INDIA

IN

1891-92.

VOL. XXV.

Presented to both Houses of Parliament by Command of Her Majesty.

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A. GODLEY,
Under Secretary of State for India.

India Office,
3rd October 1893.

REPORT.

I.—EUROPEAN ARMY.

The present Report on Sanitary Measures in India during the year 1891 is prepared for presentation to Parliament. It contains chapters on the health of the European and Native Troops, on the health of prisoners in jails, and on the health of the general population; it also contains chapters on vaccination, on medical institutions, including medical schools and lunatic asylums, and a chapter on sanitary works. Appended to the Report are abstracts of reports by the three principal Sanitary Commissioners in India, and memoranda by the Army Sanitary Commission in England reviewing the several Sanitary Reports for India.

Sickness and mortality in 1891.

There was less sickness among the European troops on service in India during 1891 than in the previous year, but the mortality was greater. Of an average strength of 67,030, the admissions into hospital were in the ratio of 1,379 per 1,000 against 1,520 in 1890, the daily sick-rate was 79, or 8 per 1,000 less, and the death-rate was 15·89 against 13·84. The loss by invaliding was 27 per 1,000, or 2 per 1,000 more than in 1890, bringing the total loss by death and invaliding up to 43 per 1,000, an increase of 4 per 1,000 on the previous year.

The following statement shows the relative extent of sickness and mortality among European troops in the three Presidencies during 1891 and the previous year:—

Presidency.		Average Strength.	Ratio per 1,000 of Average Strength.				
			Admissions.	Daily Sick.	Deaths.	Invaliding.	Total loss.
Bengal	1891	40,994	1,394	80	16·86	25	42
	1890	41,353	1,584	89	15·50	25	41
Madras	1891	13,324	1,304	82	14·49	31	46
	1890	13,707	1,442	91	12·84	23	36
Bombay	1891	12,713	1,409	73	14·24	29	43
	1890	12,763	1,396	77	9·56	29	38
India	1891	67,030	1,379	79	15·89	27	43
	1890	67,823	1,520	87	13·84	25	39

It will be seen from the above statement that of the three armies Bengal was again the most unhealthy. The chief causes of sickness in the whole European Army were, as in the previous year, venereal diseases and ague, the former yielding a ratio of 401 per 1,000 against 504 in 1890, and the latter 343 per 1,000 against 354. More than half (54 per cent.) of the total sickness resulted from these two causes. Influenza was present among the troops to a very small extent, and caused an admission rate of only 5·5 per 1,000 against 33·4 in 1890. Enteric fever, as usual, was the chief cause of mortality, and the death-rate from it rose from 4·91 to 5·73 per 1,000. Cholera also was much more prevalent, there being 252 admissions in 1891 against 58 in 1890, and 168 deaths, equal to 2·51 per 1,000, against 49 or 0·72. Of the total deaths, enteric fever caused 36 per cent., and cholera. 16 per cent.

Bengal Army.

In the Bengal Army the admission-rate fell from 1,584 per 1,000 in 1890 to 1,394, the daily sick-rate from 89 to 80 per 1,000, but the death-rate rose from 15·50 to 16·86. Venereal diseases and ague were the chief causes of admission to hospital, contributing 28 and 26 per cent. respectively of the total sickness. The chief cause of mortality was enteric fever, with a ratio of 6·64 per 1,000 against 6·26 in 1890. Under this one head alone 40 per cent. of the total deaths occurred. Cholera mortality among the Bengal troops was higher than it had been since 1881; the deaths increased from 41 or 0·99 in 1890 to 114 or 2·78 in 1891.

Madras Army.

Though there was less sickness in the European army of Madras in 1891 than in the previous year, both the admission and constantly-sick rates showing a decrease, the mortality rose from 12·84 per 1,000 to 14·49. As in Bengal and Bombay venereal diseases and ague caused the majority of the admissions, the former yielding 31 per cent. of the total admissions, and the latter 19 per cent. Among the death causes enteric fever was the chief, contributing 21 per cent. of the total deaths against 28 per cent. in 1890, cholera followed with 11 per cent.

Bombay Army.

In the Bombay Army also all the ratios, with the exception of the constantly-sick rate, were higher than in 1890, the death-rate (14·24 per 1,000) being 4·68 per 1,000 in excess. Chief among the diseases causing admissions were venereal diseases and ague, together yielding 56 per cent. of the total. Of the deaths 39 per cent. resulted from enteric fever, and 18 per cent. from cholera.

Groups of stations.

As regards the groups of stations, the old geographical system has, by order of the Government of India, been discarded in favour of a new set arranged by a committee. The new groups, numbering 12, are, the Sanitary Commissioner (Dr. Rice) reports, to be adhered to by both the medical and the meteorological departments, and are to be used equally for the statistics of European and of Native troops and of prisoners. It will be seen, however, that the groups of the European and of the Native Armies differ slightly in that, as there are no European troops in Assam, the Hill Convalescent Depôts have been separated from the Hill stations, and made a distinct group.

The following table shows the sickness and mortality among the European troops in the new groups:—

Groups.	Average Strength.	Ratio per 1,000 of Average Strength.		
		Admission Rate.	Constantly Sick Rate.	Death Rate.
Burma Coast and Bay Islands	1,624	1,277	83·7	14·16
Burma, Inland	2,711	1,781	100·0	18·07
Bengal and Orissa	2,207	1,885	99·7	16·76
Gangetic Plain and Chutia-Nagpur	6,714	1,563	98·7	24·43
Upper Sub-Himalayan	12,711	1,477	86·7	18·72
Indus Valley and North-Western Rajputana	4,627	1,360	71·8	11·67
South-Eastern Rajputana, Central India, and Gujarat	5,868	1,412	78·2	18·06
Deccan	9,490	1,231	75·7	11·70
Western Coast	1,304	1,626	85·9	5·37
Southern India	3,579	1,287	87·5	14·25
Hill Stations	9,082	1,157	65·8	11·67
Hill Convalescent Depôts	2,577	1,307	81·9	17·46

Of the above 12 groups, eight returned a higher constantly-sick rate than that of the European Army as a whole, the highest being 100·0 per 1,000 of average strength in the Burma Inland group. Bengal and Orissa followed with 99·7, and Gangetic Plain and Chutia-Nagpur with 98·7. The lowest ratio (65·8) was returned by the Hill Stations group. The death-rate of the entire Army was exceeded by six groups, the Gangetic Plain and Chutia-Nagpur returning the highest (24·23), followed by Upper Sub-Himalayan group (18·72); that of the Western Coast (5·37) was the lowest.

Of the stations with a strength of over 1,000, seven returned a higher death-rate than that of their Presidencies, viz., Allahabad 43·95, Rawalpindi 24·74, Lucknow 22·87, Bareilly 22·12, Peshawar 20·76, Meerut 19·17, and Poona 15·27.

Cholera.

The year was one of heavy mortality from cholera, and the disease affected the European troops much more severely than in 1890. The admissions to hospital from cholera numbered 252 or 3·8 per 1,000 of average strength, against 58 or 0·9 per 1,000 and the deaths 168 or 2·51 per 1,000 against 49 or 0·72 in 1890. Among the troops in the Bengal Army the mortality from cholera was higher than it had been since 1881. In 1891 there were 170 cases of the disease with 114 deaths, the latter being in the ratio of 2·78 per 1,000 of strength against 41 deaths or 0·99 in 1890. The Madras Army recorded 29 cases of cholera, of which 21 proved fatal, the deaths being in the ratio of 1·58 per 1,000. In the previous year there was only 1 case, which terminated fatally. In the Bombay Army the cases of cholera rose from 7 to 53, and the deaths from 7 or 0·55 per 1,000 to 33 or 2·60.

Among the whole of the European troops in India there were during the year under notice only 14 cases of small-pox, of which only one, in the Bengal army, was fatal, as compared with 36 cases and 4 deaths in 1890. Small-pox.

From intermittent fever the admissions to hospital among the European troops in 1891 were in the ratio of 343 per 1,000 of strength against 354 in the previous year. The deaths under this head numbered 12, an increase of two on the mortality of 1890. Of these 7 occurred among the Bengal troops, and 5 among the Madras troops. Fevers.

From enteric fever the admissions rose from 1,253 or 18·5 per 1,000 of strength to 1,366 or 20·4, and the deaths from 333 or 4·91 per 1,000 to 384 or 5·73. Of the three Armies, Madras was the only case in which the mortality under this head was lower than in 1890, while Bombay showed a considerable increase. The Bengal Army recorded an enteric fever death-rate of 6·64 per 1,000 against 6·26 in 1890, the Madras Army 3·08 against 3·65, and the Bombay Army 5·58 against 1·88. As usual, young and unacclimatised soldiers were the chief sufferers, those under 25 years of age yielding a death-rate of 9·11 per 1,000 against 7·78 in 1890, while among men between 25 and 29, and from 30 to 34, the mortality was 2·97 and 0·71 per 1,000 respectively. Among men of less than two years' residence in India the death-rate from this cause rose from 10·21 to 11·60 per 1,000, among men of three to five years from 2·98 to 3·64, and among troops of from six to ten years from 2·17 to 2·23. Enteric fever again formed the subject of investigation on the part of medical officers, but no satisfactory results were obtained as to the origin of outbreaks. Some interesting remarks regarding the opinions of bacteriologists on the diagnosis of this disease will be found in the abstract of Dr. Rice's report, pp. 47 and 48. He observes that the whole investigation is a very difficult one, and in it no amount of enthusiasm will compensate for lack of training and apparatus. "What is wanted in India is not more private work by medical officers, "however enthusiastic, but work by trained experts in properly equipped laboratories "to supplement the clinical work of medical officers." Steps have now been taken with a view to the establishment of bacteriological laboratories in India.

The admissions from dysentery and diarrhœa among the European troops were in the ratio of 60 per 1,000 of strength or 1 per 1,000 more than in 1890, and the death-rate 0·52 against 0·78. As in the previous year, there were no deaths from diarrhœa in the Madras Army, but dysentery was more prevalent than in either the Bengal or Bombay Armies. Bowel complaints.

Venereal diseases, although not so prevalent as in 1890, continued to stand first in the list of causes of admission to hospital and of invaliding. They were the cause of 29 per cent. of the admissions during 1891, and 15 per cent. of the invaliding of the European Army of India. The ratio of admissions from venereal diseases per 1,000 of strength was 401, or 103 below that of 1890. The decrease was participated in by all three armies. In Bengal the admission-rate fell from 504 to 395 per 1,000, in Madras from 491 to 402, and in Bombay from 515 to 417. The reduction of the admission-rate of over 100 per 1,000 was partly attributed by some medical officers to the opening of new cantonment hospitals. "The "returns from many of the new cantonment hospitals themselves," Dr. Rice says, "are still wanting. Most of those that have been received do not show large "attendances of either venereal or other patients; but it is not so important that "large numbers should be treated as that the real spreaders of disease should come "under treatment. *One* diseased woman, if visited by many men, may work great "havoc in a station. Again, low admissions among women may mean either absence "of disease or failure to take advantage of the hospitals." Venereal diseases.

The loss to the whole army by invaliding during 1889 amounted to 1,793 men, equal to 26·78 per 1,000, against 1,715 or 25·29 in 1890. The proportion of invalids to strength was least in Bengal (24·64 per 1,000) and highest in Madras (31·28), that of Bombay being 28·98. Of the total number invalided 34 per cent. were discharged as unfit for further service, just 1 per cent. less than in 1890. As regards the influence of age and length of residence in India upon invaliding, 54·01 per cent. of the number were under 25 years of age against 53·04 in 1890, while 30 per cent. of the total number invalided were of less than two years' service, and 77 per cent. were of less than five years' service. In the European Army as a whole 80 per cent. of the total strength had seen less than five years' service, and 51 per cent. were under 25 years of age. Invaliding.

II.—NATIVE ARMY.

Sickness and mortality in 1891.

The health of the Native Army of India during 1891 was, on the whole, more satisfactory than in the previous year, though the death-rate, on account of the prevalence of cholera, remained high.

The ratios of sickness and mortality of each section of the Native Army of India for 1891 and the previous year are given in the following table :—

		Average Strength.	Ratio per 1,000 of Average Strength.			
			Admissions.	Daily Sick.	Deaths.	Total Deaths, including Absentees.
Bengal Native Army	1891	66,230	1,021	35	17·32	18·10
	1890	64,080	1,306	42	19·16	21·82
Madras ditto	1891	26,088	1,017	46	20·05	27·28
	1890	26,032	924	41	15·63	20·64
Bombay ditto	1891	23,780	978	31	9·63	12·34
	1890	24,032	1,139	35	10·99	12·92
Corps of Central India and Rajputana	1891	5,175	629	20	7·73	8·96
	1890	5,118	702	21	9·96	9·96
Hyderabad Contingent	1891	7,063	529	9	6·09	7·83
	1890	7,071	553	17	4·81	6·71
India	1891	128,600	972	35	15·44	19·34
	1890	127,746	1,137	39	15·91	18·64

As usual the Hyderabad Contingent and the Central India Irregular Force were the healthiest branches of the Native Army. The Madras Army returned the highest sick and death-rates, due to some extent to the unhealthiness of troops serving in Burma.

The chief cause of sickness in the Native Army was ague, which yielded 44 per cent. of the total admissions. Among the diseases from which the admissions to hospital were higher than in 1890 were cholera and bowel complaints; while from influenza, small-pox, all fevers except enteric, and pneumonia, there was a decrease in the admissions. Cholera and pneumonia were the chief causes of death in the Native Army, the ratios being 2·64 and 2·59 per 1,000 respectively of average strength against 1·83 and 3·96 in 1890. Under these two heads, 33 per cent. of the total deaths were registered. Fevers of all kinds were the cause of 20 per cent. of the total deaths, against 40 per cent. among the European troops. From ague, remittent and simple continued fevers, the deaths among the Native troops were in the ratio of 2·89 per 1,000, while among the European troops the proportion was only 0·60. On the other hand the death-rate from enteric fever among the Native troops was only 0·13 per 1,000 as compared with 5·76 among the European troops, and 0·08 among prisoners in jail. Native troops seem to be more liable to dysentery than European troops, for while among the former this disease caused 5·6 per cent. of the total deaths, among the latter it was the cause of only 2·8 per cent. of the deaths. But of all diseases those of the respiratory organs are the chief causes of death in the Native Army. From pneumonia the mortality of Native soldiers (326 or 2·53 per 1,000), was nearly five times as great as that of European troops (36 or 0·54 per 1,000).

Bengal Native Army.

The health of the Native Army of Bengal in 1891 was much better than in 1890. There was considerably less sickness, and the death-rate fell from 19·16 per 1,000 to 17·32. Ague, though less prevalent than in 1890, caused 43 per cent. of the total admissions. Cholera and pneumonia were the chief causes of death, the former yielding over 21 per cent. of the total deaths, and the latter 19 per cent.; the cholera death-rate was 3·73 against 3·28 in 1890.

The following statement gives the principal statistics of the Native Army, arranged in geographical groups, for 1891 :— Groups stations.

	Average Strength.	Ratio per 1,000 of Average Strength.		
		Admissions.	Daily Sick.	Deaths.
Burma Coast and Bay Islands	2,111	992	57	20·37
Burma, Inland	8,261	1,990	88	40·79
Assam	2,157	1,890	77	24·57
Bengal and Orissa	3,125	1,322	54	16·32
Gangetic Plain and Chutia-Nagpur	7,079	803	31	8·90
Upper Sub-Himalayan	14,097	771	30	11·92
Indus Valley and North-Western Rajputana	15,298	1,141	36	14·64
South-Eastern Rajputana, Central India, and Gujarat	14,027	749	24	7·13
Deccan	20,265	735	27	7·65
Western Coast	3,731	624	23	7·77
Southern India	7,742	538	26	7·62
Hill Stations	12,808	1,428	47	17·80

In six of the above groups the daily sick-rate was in excess of the ratio for the whole Native Army; and in five groups the death-rate was higher. The high mortality of the Burma Inland group (40·79) was partly due to cholera, dysentery and diarrhœa and ague, the death-rates from which were 2·42, 8·96, and 8·72 per 1,000, all being considerably higher than those of any other group.

The health of the corps of Central India and Rajputana (average strength 5,175) was also better than in the previous year. The admission-rate fell from 702 to 629 per 1,000, and the death-rate from 9·96 to 8·96. Ague was the cause of 36 per cent. of the total sickness. Pneumonia and remittent fevers were the principal death causes, the former having accounted for 35 per cent. of the total mortality and the latter 20 per cent. Corps of Central India and Rajputana.

The health of the troops composing the Hyderabad Contingent was not so good as in 1890. Of an average strength of 7,063, the admissions to hospital were equal to 529 per 1,000 of strength against 553, and the death-rate was 6·09 against 4·81. Ague was the chief cause of sickness, yielding 34 per cent. of the total sickness; and cholera and pneumonia were the principal causes of mortality, yielding 19 and 16 per cent. respectively of the total deaths. In the previous year there was no cholera among these troops. Hyderabad Contingent.

The health returns of the Madras Native Army were again materially affected by the inclusion of the statistics of troops on service in Burma. The ratio of admissions to hospital per 1,000 of an average strength of 26,088 was 1,017 against 924 in 1890, the daily sick-rate was 46 or 5 per 1,000 more, and the death-rate rose from 15·63 to 20·05 per 1,000. Ague caused 46 per cent. of the total sickness. From cholera there were 52 deaths, equal to 1·99 per 1,000, against 14 or 0·54 in 1890. Ague caused 18 per cent. of the total deaths, cholera 10 per cent., and remittent fever and pneumonia each nearly 8 per cent. Of the Native troops on service in Burma during 1891, the Madras Army furnished 83 per cent. Among this portion the admissions into hospital were in the ratio of 1,676 per 1,000, the constantly sick-rate 76, and the death-rate 36·31. Madras Native Army.

There was a marked improvement in the health of the Bombay Native Army in 1891. Of an average strength of 23,780 the admissions to hospital were in the ratio of 978 per 1,000 against 1,139 in 1890, the daily sick-rate was 31 or 4 per 1,000 less, and the death-rate 9·63 against 10·99. Ague caused 46 per cent. of the total sickness. Pneumonia was the chief cause of mortality, contributing 18 per cent. of the total deaths, and cholera and remittent fever each over 13 per cent. Bombay Native Army.

III.—GENERAL POPULATION.

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tistics.

Births were registered throughout all the 10 provinces of India in 1891 excepting Bengal, where the system of limited registration still remained in force, and was confined to 141 of the total 145 municipal towns. The provincial birth-rates varied between 20·31 and 43·09 per 1,000 of population under registration. The best results were obtained in Berar and in the Central Provinces, their respective birth-rates being 43·09 and 42·8; Bombay came next with 36·27, the Punjab 34·02, and the North-Western Provinces and Oudh 33·26. In all provinces except Bengal, Assam, and Coorg, the birth-rate exceeded the death-rate. The year was more unhealthy than 1890, and the registered deaths rose from 5,848,122 to 5,885,539, but owing to the ratios of mortality of nearly all the provinces being calculated on the census population of 1891, the average death-rate declined from 30·14 to 28·42. Of the chief diseases, cholera was very prevalent, and the total number of deaths from it were 582,430, being the highest figures recorded in any year since 1877, and an increase of 291,228 on the deaths from the disease in 1890. Every province contributed to the increase, but especially Bengal, the North-Western Provinces and Oudh, and Madras. In Bengal and Assam the number of cholera deaths was the greatest on record. There was an increase also in the deaths from dysentery and diarrhœa. On the other hand, the mortality from small-pox and fevers showed a noticeable decrease, which however was not general, as under each heading several provinces registered a greater number of deaths than in 1890.

The deaths from the chief diseases and from all causes in the several provinces were as follows:—

	Cholera.		Small-pox.		Fevers.		Disentery and Diarrhœa.		Deaths from all Causes.		
	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000 of Population under registration.	
										1891.	1890.
Bengal, excluding Calcutta	229,575	3·26	16,193	0·23	1,333,395	18·94	43,183	0·61	1,896,261	26·94	24·48
Calcutta	1,553	3·32	13	0·02	4,675	10·02	1,433	3·07	13,033	27·94	27·93
North-Western Provinces and Oudh	169,013	3·60	26,355	0·56	1,033,059	22·02	49,586	1·06	1,460,732	31·14	37·27
Punjab	10,107	0·49	3,426	0·17	442,254	21·52	12,152	0·59	598,789	29·13	46·87
Lower Burma	2,400	0·52	1,326	0·29	35,658	7·76	4,162	0·91	73,190	15·93	17·40
Central Provinces	21,312	2·42	748	0·08	190,550	21·61	20,889	2·37	313,364	35·54	32·52
Coorg	7	0·04	476	2·75	2,703	15·61	172	0·99	3,771	21·79	25·32
Assam	23,882	4·76	2,351	0·47	75,965	15·13	14,418	2·87	150,156	29·91	29·64
Madras	98,773	3·5	41,322	1·4	247,029	8·6	34,223	1·2	747,553	26·2	32·80
Bombay	17,850	0·95	1,491	0·08	368,913	19·60	37,728	2·00	513,182	27·26	28·18
Berar	7,988	2·8	34	0·01	49,850	17·5	22,007	7·7	115,558	40·6	35·49
Total	582,430	2·81	93,745	0·45	3,784,051	18·27	239,953	1·15	5,885,539	28·42	30·14

ngal.

Registration of births and deaths in Begal during 1891 was again very indifferently performed. Since the close of the year important steps have been taken in the matter. Municipalities have been relieved of the work of recording vital statistics, and the town police entrusted with the duties. In 1891 the registration of births was limited to 141 towns whose average birth-rate was only 21·46 per 1,000 of their population, which was made up of town ratios ranging from 44·57 to 2·95. Birth registration has also from the 1st January 1892 been reintroduced in rural areas, and it is expected that in future the results will be more accurate.

The year was exceptionally unhealthy. The rainfall was deficient by nearly 16 inches, and the out-turn of crops was below the average in 36 of the 44 districts, giving rise to higher prices of food grains. But the chief cause of the exceptional sickness of the year was the Ardhodoya Jog fair, where cholera was prevalent. The total registered deaths amounted to 1,896,261 or 26·94 per 1,000, based on the census of 1891, against 1,612,479 or 24·48, calculated on the census figures of 1881. Compared with other large provinces of India, the death-rate of Bengal was below

that of any excepting Madras. "This circumstance, I think," Dr. Gregg, the Sanitary Commissioner, says, "shows how imperfect the registration of vital statistics must still "be in Bengal, where I estimate the death-rate is not less than 34 per 1,000 of the "population, for there is no doubt that Bengal is as unhealthy, if not more so, than "any other province in India." Only seven of the 44 districts in the province enjoyed better health than in 1890.

Of the chief diseases, cholera prevailed with great severity. The death-rate from it was the highest on record except that of 1876. No less than 229,575 persons died from the disease in 1891, equal to 3·26 per 1,000 of population, against 145,885, or 2·07 in 1890. Every district was affected, and nearly all recorded an increased mortality as compared with the previous year. Purnea, Jalpaiguri, Nadia, Rangpur, and Shahabad were the chief sufferers, recording cholera death-rates of 11·08, 9·93, 9·36, 8·35, and 6·95 respectively. The excessive mortality from this disease was attributed by Dr. Gregg to the Ardhodoya Jog bathing festival in Nadia and the scanty rainfall of the year. The festival occurs only once in 27 or 28 years, and the gathering on this occasion was unusually great owing to the belief that it was to be the last that would be held on the banks of the Ganges. Thousands of pilgrims arrived in an exhausted condition to suffer more privations and hardships among the enormous crowds already assembled; cholera broke out amongst them, and many died at the places where they congregated on the river, and others on their way to or at their homes. In this way the epidemic is supposed to have been introduced into most of the localities through which the pilgrims passed and communicated to the non-pilgrim population. But the Army Sanitary Commission do not consider the evidence on which this opinion is based warrants the conclusion. They, however, think it important in unhealthy seasons to discourage fairs as far as possible; but "the proper 'remedy," they observe, "is to regulate the sanitary conditions at the places where "the fairs are held, and to protect towns and villages alike by improvements in "water-supply, drainage, and all other sanitary requisites." A set of rules for the better sanitary regulation of fairs was being considered by the Government of Bengal.

The mortality from small-pox was in excess of any year since 1884. The deaths numbered 16,193 per 1,000 or 0·23 against 12,619 or 0·17 in 1890. The districts of Cuttack, Midnapore, Puri, and Lohardaga suffered most, which, in Dr. Gregg's opinion, was due to the insufficiency of vaccination establishments. For instance, Midnapore town, with a population of about 33,000 people, is reported to have entertained only one vaccinator. Nearly two-thirds of the deaths from small-pox occurred among children under 12 years of age. As regards the mortality in towns, Dr. Gregg reports: "The "usual excuse is offered in most cases, viz., that the disease was introduced from "without, and did not originate in the towns themselves; but, as I pointed out in "last year's report, this does not exonerate the local authorities from blame, because "if their towns had been thoroughly protected by vaccination, small-pox, when "imported, would not have created much havoc, and could easily have been stamped "out." The Vaccination Department has since been re-organised, and greater efficiency in vaccination work is expected.

Under fevers 1,333,395 deaths were registered, representing a ratio of 18·94 per 1,000, or nearly three-fourths of the entire death-rate of the province. "No doubt," Dr. Gregg writes, "some inflammatory and other diseases, such as pneumonia, "influenza, and the like, are occasionally recorded under this head, but in the main "malarial poison is the cause of the high death-rate of the fever mortality returned." In the previous year (1890) the high rate of fever mortality (1,155,569, or 16·42 per 1,000) was said to have been induced by excessive rainfall, and the still higher death-rate of the year under notice, Dr. Gregg states, must be attributed principally to deficient rainfall. His reasons for this conclusion, in the opinion of the Government of India and of the Army Sanitary Commission, are not convincing, "and it would rather "seem," the Commission say, "as if, over and above the meteorological conditions of "excessive or deficient rain, there was some other unknown factor at work deter-"mining the results. . . . . We have failed to discover in the statistics "adduced any direct relation between the extent of the fever mortality and the "deficiency of rain." Dr. Gregg was also of opinion that a lower standard of living owing to the failure of crops and high prices of food had much to do with the febrile unhealthiness of the year. Six out of the 44 districts recorded fever death-rates of over 30 per 1,000, 10 others over 20 per 1,000, and the remaining 28 districts above 10 per 1,000, except Saran (10·00) and Puri (4·98).

Under dysentery and diarrhœa there were 43,183 deaths registered, equal to a ratio of 0·61 per 1,000, a mortality almost identical with that of 1890.

The health of the town of Calcutta during 1891 was less satisfactory than in any previous year except 1884. The registered deaths rose from 12,382 in 1890 to 13,033, which gives a ratio of 27·94, based on the Census of 1891. All the chief diseases contributed to the increase, except small-pox, from which the mortality declined from 700 to 13. From cholera the deaths rose from 963 to 1,553, the excess being attributed partly to an outbreak of the disease at the Ardodhoya Jog noticed above. The fever mortality (4.675) was also 1,111 above the mean of the previous 10 years.

North-Western Provinces and Oudh.

The Sanitary Commissioner of the North-Western Provinces and Oudh (Dr. Hutcheson) reports that "the general registration of births and deaths in the "united provinces is undoubtedly effected with considerable accuracy." Owing to the excessive mortality in the spring and autumn months of the previous year there was a decrease of 191,280 in the births registered in 1891, the number having fallen from 1,751,168 in 1890 to 1,559,888. Calculated on the recent Census figures the birth-rate per 1,000 of population was 33·26, which was made up of district rates varying from 18·32 in Dehra Dun to 40·51 in Pilibhit. The births of the year exceeded the deaths by only 99,156. Notwithstanding a very severe epidemic of cholera, the year was a comparatively healthy one. Altogether 1,460,732 deaths, equal to 31·14 per 1,000 of the population, were registered, or 183,295 fewer than in 1890. The district death-rates varied from 47·00 in Sultanpur to 20·31 in Dehra Dun. Of the 49 districts of the province 14 recorded a mortality of over 35·00, while only seven showed a rate under 25·00 per 1,000. Both the urban and rural death-rates were much less than in 1890, and corresponded with the fall in the general death-rate of the province. There was also a decline in the infantile death-rate from 234·5 per 1,000 in 1890 to 204·1, this being the lowest on record. In 20 districts the recorded deaths were in excess of the births.

Cholera prevailed with greater severity than in any year in the last decade except 1887, and the deaths rose from 80,295 in 1890 to 169,013 or 3·60 per 1,000. Every district was affected, and 15 out of the 49 recorded a higher mortality than the provincial rate. The districts with exceptional death-rates from cholera, were Sultanpur 17·59, Partabgarh 13·03, Rae Bareli 10·61, Fyzabad 7·35, and Jaunpur 6·01. The most fatal months were May, June, and July, when 98,386 deaths were recorded. The epidemic sustained its virulence throughout the year, and the disease has since disseminated to a lamentable extent. Several of the towns showed an extraordinary mortality. Among them were Bilgram with a cholera death-rate of 35·44, and Kairana 32·14. As an instance of the efficacy of strict sanitary precautions on the disease, Dr. Hutcheson notices the immunity of the 3rd Gurkhas while passing through the Bhabar during a violent outbreak. It is also noticed that in spite of the great prevalence of cholera during the year the Kumb fair at Hurdwar passed off without any outbreak of the disease either at the fair or after it. This was entirely due to the excellent precautionary sanitary measures initiated. On the other hand the Army Sanitary Commission instance several cases of the relation of sanitary defects to cholera prevalence, and they ask whether more decided and systematic efforts cannot be made to remedy them. It appears, however, that epidemic outbreaks of late years are less frequent, and that when they do occur they are more localized.

Small-pox was considerably less fatal than in 1890, the deaths amounting to 26,355 equal to 0·56 per 1,000 of population, against 55,394. In four districts adjacent to Bengal (Gorakhpur, Azamgarh, Ghazipur, and Ballia) the disease was severe, and in these it is stated inoculation is occasionally practised by operators from that province. In the two first districts vaccination is very backward, only 13·17 and 12·44 per 1,000 of population, respectively, having been successfully vaccinated during the year, which were the lowest ratios recorded in the provinces. The highest town death-rate from the disease was 14·97 at Barhaj, but in 39 other towns, with populations of over 10,000, there were no small-pox deaths. Three-fourths of the total small-pox deaths occurred among children under 12 years of age, a fact which shows the absence of protection by vaccination.

No less than 70 per cent. of the total registered deaths in the province were ascribed to fevers. The number recorded in 1891 was 1,033,059 or 22·02 per 1,000, a decrease of 211,267 on the previous year, which was attributed to the diminished prevalence of epidemic influenza, and the comparative healthiness of the people during the autumn months. It would appear, however, that registration of deaths under this head is very unreliable, as in seven districts the percentage of deaths from fevers to the total deaths varied from 95 to 89 per cent. Among districts the Tarai, as usual,

headed the list with a fever death-rate of 38·82, followed by Fatehpur 31·45, Farukhabad 31·39, Saharanpur 31·15, and Muzaffarnagar 30·44.

Fewer deaths were also registered under dysentery and diarrhœa than in 1890, viz., 49,586 or 1·06 per 1,000 against 53,604. There can be little doubt also of the imperfect registration of deaths from these causes, as four towns returned no deaths, and in several others the "record was obviously absurd."

Punjab.

The general health of the Punjab in 1891 was much more satisfactory than in the previous year, when the deaths exceeded the births by 146,748. In the year under notice the registered births were more numerous than the deaths by 100,453. Owing, however, to the excessive sickness that prevailed in 1890, the number of births registered fell from 736,406 to 699,242. Calculated on the census figures of 1891, the birth-rate of the year was 34·02 per 1,000. The greatest deficiency was observed in the districts of Sialkot, Gujrat, Gurdaspur, and Gujranwala, in which the highest mortality was recorded in the autumn of 1890. The number of deaths registered in the province was 598,789, or 29·13 per 1,000, showing a decrease of 284,360 compared with 1890. By districts the highest death-rate (41·98 per 1,000) was recorded in Delhi, Sialkot coming next with 34·04, followed by Karnal, Gurdaspur, Umballa, and Amritsar, with ratios of over 30 per 1,000. The lowest death-rate (20·24) was recorded by Hazara, and the next lowest (22·73) by the small district of Simla.

Cholera was again epidemic in the province, and was the cause of 10,107 deaths or 0·49 per 1,000 against 3,401 in 1890. The first death was reported from Ding in the Sirsa thana of the Hissar district on the 4th of April, and between that date and the middle of October the epidemic became general, the only districts escaping being Simla, Shahpur, Dera Ismail Khan, Dera Ghazi Khan, and Muzaffargarh. The districts from which the highest cholera death-rates were returned were Peshawar 4·82, and Kohat 3·57 per 1,000. One of the severest outbreaks in the former district occurred in Mattani and several neighbouring villages, in connexion with which the Civil Surgeon reported:—"The probable cause of this increased outbreak was a "fouling of the irrigation channel from which the people of these villages drink." Serious outbreaks of cholera also occurred in the Ludhiana and Lahore districts, their respective death-rates from the disease being 1·54 and 1·47 per 1,000. The rural population suffered much more severely than the urban, the death-rate of the former being 6·73 per 1,000; while in 50 municipal towns in which the disease occurred the mortality was only 1·82. The comparative immunity of the towns is stated to be due to the protection of the wells by the provision of platforms, to which copings are usually attached, whereas in many villages drinking water wells have no such protection, the mouths of the wells being often at a lower level than the ground around them. This want the Lieutenant-Governor believes to be one of the greatest needs in village sanitation, and will, he has no doubt, engage the attention of the Sanitary Board when it comes to consider the Sanitary Bill which was prepared in the previous year. Out of 37,579 towns and villages in the province only 1,039 recorded cholera deaths.

The province enjoyed comparative immunity from small-pox during the year. Only 3,426 deaths were registered from this cause, the death-rate (0·17 per 1,000) being the lowest since the registration of deaths was commenced in 1868. The low rate of mortality was due partly to the work done by the Vaccination Department. The Sanitary Commissioner (Colonel-Surgeon Stephen) reports that "when a weekly report "shows that several deaths from small-pox have been reported from any town or "rural area, the attention of the Civil Surgeon is called to the matter, and vaccinators "are at once sent to the locality, if the outbreaks occur during the vaccinating season, "with instructions to vaccinate as many unprotected persons as possible." At the close of the year, however, the disease became unusually prevalent in several districts, "and the small-pox death-rate," the Sanitary Commissioner states, "will almost "certainly be larger than it was in 1891." This opinion is confirmed in the increase of the deaths from this disease in 1892 to over 11,000.

From fevers 442,254 deaths were reported during the year, representing a death-rate of 21·52 per 1,000 against 692,254 or 33·69 in 1890, the latter being the highest on record. The provincial ratio was made up of district rates ranging from 27·98 per 1,000 in Delhi to 12·80 in Simla. The majority of the deaths registered under this head are reported to have been caused by malarial fevers and their sequelæ, and the Sanitary Commissioner therefore urges that special attention should be directed to measures calculated to put a stop to these causes, namely, the drainage of swamps and water-logged areas. "In the Lieutenant-Governor's opinion," it is stated in the Government Resolution on

the Sanitary Commissioner's report, "in comparison to the benefit to public health "attainable by drainage works, the benefit to be expected from village sanitation "sinks into insignificance, but unfortunately these drainage works are expensive, and "can only gradually be carried out." Fever of a continued type is stated to have been the cause of considerable mortality in the frontier districts during the earlier months of the year. The Civil Surgeon of Peshawar reports that continued fever was prevalent in the district during the cold-weather months, but the symptoms were those of typhus fever, and that the typhus fever rash was visible in many cases, especially towards the end of the cases. "It would be impossible," he says, "to imagine a more "perfect home for typhus than that offered by the people of this valley. Their "one-roomed houses, 20′ × 25′ × 6′, built to keep out cold, are low and dark, with "not a vestige of ventilation, and no exit except the one door which is made to resist "thieves and draughts. Within them, all through the winter, are agricultural "implements, all the goods and chattels of the master, half-a-dozen head of cattle, "and probably the same number of people."

The deaths registered under dysentery and diarrhœa were considerably below the average. They numbered, during the year, 12,152 or 0·59 per 1,000, a decrease of 5,011 on the figures of 1890, which was attributed to the small amount of rain which fell during the autumn months, and to the moderate prevalence of malarial fevers.

Burma.

Registration of vital statistics in Burma during 1891, as in previous years, was confined to the lower portion of the province. The results show a slight improvement on those of the previous year, but they were still very far from satisfactory. The number of births registered was 95,332, giving a ratio of 20·74 per 1,000, calculated on the Census figures of 1891, compared with 84,769 or 23·2 in 1890, or 19·00 of the population of 1881. There were 73,190 deaths registered, equal to 15·93 per 1,000, against 63,591 in 1890. There can be little doubt that both birth and death ratios are much below the true figures, and this is further shown by the wide variations between the ratios of different districts, ranging in births from 12·88 in Thongwa to 30·53 in Tharrawaddy, and in deaths from 10·85 in Amherst, to 25·08 in Hanthawaddy. The Officiating Sanitary Commissioner (Surgeon-Major P. W. Dalzell) estimates that half the deaths among the rural population escape registration; but hopes are entertained that the scheme recently introduced of utilising the services of the vaccination staff in testing district registration will result in some improvement.

From all the chief diseases except small-pox there was a rise in mortality as compared with the previous year. Cholera deaths increased from 1,076 to 2,400 or 0·52. As in 1890 there was very little cholera in the Arakan division of the province, Akyab being the only district out of three which recorded deaths (12) from the disease. The two districts of Tavoy and Mergui enjoyed almost complete immunity from cholera, the deaths being only two and one respectively. About a third (889) of the total cholera deaths was reported from Thongwa. The disease prevailed throughout the year, April and May being the most fatal months, with a mortality of 353 and 513 respectively. Of the total 17,807 villages in Lower Burma, 547 registered cholera deaths against 397 in the preceding year.

There was a decrease of 2,367 deaths under small-pox; the number registered was 1,326, or 0·29 per 1,000 against 3,693 in 1890. The districts of Sandoway, Mergui, and Toungoo were exempt from the disease, and Tavoy recorded only one death. Only 11 deaths were returned from the Arakan division. The greatest decrease was in the case of Prome district, in which there was the satisfactory decline from 870 deaths in 1890 to 18 in the year under notice. Nearly two-thirds of the mortality occurred among children under 12 years of age. The districts most severely affected were Henzada (322 deaths or 0·73 per 1,000), Pegu (274 or 0·91), Hanthawaddy (242 or 0·54), and Thongwa (240 or 0·54), together accounting for 1,078, and leaving only 248 for the remaining 12 districts.

The deaths ascribed to fevers amounted to 35,658 or 7·76 per 1,000, an increase of 3,426 on the number registered in the previous year. The provincial ratio was exceeded in seven districts, of which Akyab recorded the highest, viz., 11·84., Prome following with 11·72, Sandoway with 10·79, and Mergui with 10·62. The heaviest mortality occurred in August, but fevers were very prevalent during the four subsequent months.

Under dysentery and diarrhœa 4,162 deaths were registered, equal to a ratio of 0·91 per 1,000, which was exceeded by seven districts, three (Sandoway, Hanthawaddy, and Toungoo) having returned death-rates of over 2 per 1,000.

Central Provinces.

The public health of the Central Provinces in 1891 was not so satisfactory as in the previous year. The monthly mean humidity of the province was higher than usual

or half the year, and the mean rainfall (63·63 inches) was 12·58 inches above the verage of the last 25 years. Progress continued to be made in the registration of births. The number of births recorded was 379·918 or 43·09 per 1,000 of population, based on the Census figures of 1881, those for the recent Census not being vailable when the Sanitary Commissioner's (Surgeon-Colonel Pilcher) report was vritten. Compared with 1890 there was an increase of births in 1891 of 41,274, in vhich all the districts participated except Sambalpur. Nimar district, as usual, eturned the highest birth-rate (54·45), and the lowest (35·58) was recorded in the Saugor district. In 14 of the 20 districts of the province the births exceeded the eaths. Deaths were registered to the number of 313,364 or 35·54 per 1,000, xceeding the mortality of 1890 by 26,610; this excess was spread over all the istricts but five, and more than half of it was due to cholera. The highest district eath-rate (46·84) was recorded by Hoshangabad, and the lowest (25·65) by Bilaspur. As usual the greatest mortality was among children under five years of age, the eaths in this class being 45 per cent. of the total as compared with 43 per cent. in he previous year.

The total deaths from cholera amounted to 21,312 or 2·42 per 1,000 of the population, eing 16,525 more than in 1890. The disease prevailed in all the districts, but in Sambalpur and Burhanpur the mortality from it was very slight. Six districts suffered ery severely, Hoshangabad coming first with a death-rate of 7·37, Murwara 6·43, Narsinghpur 5·91, Damoh 5·70, Jubbulpore 5·54, and Mandla 3·98. In many places he disease is reported to have been introduced by pilgrims or other persons returning rom fairs or large gatherings of people, a theory, the Army Sanitary Commission oint out, which "is too apt to be readily accepted as a satisfactory explanation of cholera epidemic. The disease was brought to the place, and that is sufficient. But the remarkable contrasts between epidemic and non-epidemic years, the prevalence of the disease over certain well-defined areas, and the comparative escape of others, the wide distribution of the epidemic over a province, and yet the small proportion of villages attacked, these and many other noteworthy facts that might be cited, all tend to show that the belief in importation affords but a very incomplete solution of the problem. . . . The only practical measures that can be taken, must be directed to searching out local defects, and remedying them as far as possible, and to this end all reports, both from Civil Surgeons and the other sanitary authorities should be more especially directed." Out of 29,157 villages in the rovinces deaths from cholera were reported from 2,085.

Small-pox was less prevalent than usual, the deaths numbering only 748 against ,265 in 1890. Of these 511 occurred among children under 12 years of age. The ratio per 1,000 of population (0·08) was the least of any of the preceding 8 years. All the districts were affected except Jubbulpore, and at Damoh only a ingle death from the disease was reported. Bhandara district suffered most with 90 deaths or 0·27 per 1,000, a ratio however below the mean of the previous five years.

The deaths registered from fevers were fewer than in 1890 by 1,338, the total for 891 being 190,550 or 21·61 per 1,000 against 191,888 or 21·76. In ten districts here was a decrease in mortality as compared with 1890, in nine an increase, and in he remaining one a similar ratio.

From dysentery and diarrhœa 20,889 deaths were registered, exceeding the figures of 1890 by 3,168. The Sanitary Commissioner thinks that many casualties from cholera are probably included under these heads. In all the districts except four Murwara, Burhanpur, Betul, and Nagpur) there was a more or less increased fatality rom these complaints. The district death-rates ranged from 5·30 in Sambalpur, and 5·21 in Jubbulpore, to 0·27 in Bhandara; the provincial average mortality (2·37 per 1,000) was exceeded in eight districts.

Assam.

Registration of vital statistics continued to be very defective in Assam. In the year under review 143,548 births were recorded, representing a ratio of 28·59 per 1,000 of he population, against 138,326 or 30·56 in 1890. The decrease in the ratio of 1891 was mainly due to its having been calculated on the recent Census population, which showed an increase of 494,125 as compared with the Census figures of 1881. The district birth-rates ranged between 34·09 in Sylhet and 21·32 in Kamrup. As an example of the untrustworthiness of the statistics, the birth-rates of the sadr towns varied from 3·98 to 35·64 per 1,000 of the population. The deaths registered during the year amounted to 150,156 or 29·91 per 1,000 against 134,195 or 29·64. The recorded death-rate of the province thus exceeded the birth-rate by 1·32 per 1,000. The district ratios of mortality ranged from 35·91 in Goalpara to 19·91 in Sibsagar. The

increase in deaths was spread over five out of the nine districts of the province, but was chiefly noticed in the two districts (Cachar and Sylhet) comprising the Surma Valley, in which there was an excess of 19,052 on the deaths registered in 1890.

The rise in mortality was common to all the chief diseases, and was especially marked under cholera, the deaths from which rose from 15,396 or 3·40 per 1,000 to 23,882 or 4·76, an increase of 8,486. The greater part of this excess occurred in the Surma Valley, while in the Brahmaputra Valley the increase of 1,276 was confined to two of the six districts. The increase in cholera mortality is considered to have been mainly due to the great festival of Ardhoday. "For this festival," it is reported, "all who "could manage it, went to Calcutta or to Murshidabad to bathe in the Ganges. The "pilgrims returning came back with cholera. Every steamer arriving here (Dhubri) "had cholera-stricken pilgrims on board." A secondary cause assigned is the Manipur expedition, which brought a considerable influx of persons from India, among whom cholera was very prevalent. "Whatever opinions may be entertained on the question "of human intercourse," the Army Sanitary Commission state, "we entirely concur "with the Sanitary Commissioner in his opinion as to the great importance of "sanitary improvements as the great, and we believe the only, efficient means of "preventing cholera. 'I find,' he says, 'that wherever sanitation has not been "'brought into practice and in use, there cholera, when it appears, has a greater and "'more serious incidence,' and under this general head of sanitation he, very properly, "includes not only pure drinking water, but also good conservancy, good food, and "good drainage."

The mortality from small-pox rose from 1,401 in 1890 to 2,361, an increase of 960 deaths, which was almost entirely due to the results in the two districts (Cachar and Sylhet) of the Surma Valley, and in the district of Kamrup. The increase in Cachar from 265 to 739 was stated to be mostly due to inoculation, and partly to defective vaccination; and in Kamrup from 312 to 640 to neglect of vaccination in the district; while the cause of the comparatively slight increase in Sylhet from 781 to 908 is not stated.

Fevers caused 1,186 more deaths than in 1890, the number having risen from 74,779 to 75,965 or 15·13 per 1,000. This increase was attributed to the advance of kala-azar, from which alone there were 9,937 deaths during the year. The provincial increase of mortality under fevers was, with a few slight and unimportant exceptions, confined to the Sylhet district, and was attributed to the small rainfall (117·12) inches, which was less by 66·78 inches than in 1890, and also than in any year since 1871. The Civil Surgeon reports: "Why the year should be so malarial, I don't know, but "I would venture the opinion that the smaller rainfall has had something to do with "it. It has been generally accepted that completely submerged tracts are compara-"tively salubrious, while ground only partially submerged is most unhealthy. "The cleansing effect of 66 inches of rain (the difference in fall between this and the "preceding year) must not be lost sight of as an additional factor." Dr. Giles, an officer specially experienced in bacteriology, who was deputed by the Government of India to enquire into kala-azar, submitted a report on the subject in the winter of 1890. As stated in last year's report, he believes the disease to be essentially the same as that known as anæmia, or beri-beri of Ceylon. As a result of Dr. Giles' report, various measures, such as the opening of dispensaries in kala-azar centres, were being taken, which it is hoped may do something to prevent the spread of this fatal disease.

From dysentery and diarrhœa 14,418 deaths were registered, equal to 2·87 per 1,000, which is an increase of 1,403 on the previous year. It is thought, however, that some of the deaths registered under this head, were really due to kala-azar, persons with this disease sometimes suffering from dysentery and diarrhœa; and "as diarrhœa is one of "the symptoms of kala-azar, either dysentery or diarrhœa, when only thus a symptom, "is apt to be registered instead of the true disease."

Madras.

The year 1891 in the Madras Presidency was not a healthy one: the rainfall (38·26 inches), was lower than that of any of the previous years, and affected all the districts but three; but the deficiency was most marked in the three central districts on the east coast, viz., Madras, Nellore, and Chingleput. With the failure of the rains the prices of the principal food grains, which had been steadily rising since 1887, rose still higher. The record of births and deaths shows that 924,238 births were registered during the year, equal to a ratio of 32·4 per 1,000, based on the census population of 1881, which is the highest rate yet recorded, against 893,645 or 31·3 in 1890. There was thus an increase of 30,593, to which all the districts but five contributed. The district birth-rates ranged from 44·7 per 1,000 in Madras, to 22·7 in Godavari. In all districts

except Madras and South Arcot, there was an excess of births over deaths registered, the total increase for the Presidency being 6·2 per 1,000. In Madras district the deaths, owing to the prevalence of cholera, fevers, and bowel complaints, exceeded the births by 14·7 per 1,000.

The mortality of the year was higher than had been recorded in any of the previous 20 years, except the famine years 1877 and 1878, and was mainly due to the ravages of cholera, though improvement in registration is thought to have had something to do with the increase. The number of deaths registered was 747,558 or 26·2 per 1,000 against 650,394 or 22·8 in 1890. Of these 37·3 per cent. were among children under five years of age. Mortality was higher in all districts except Salem and South Canara, the highest death-rate being recorded as usual by Madras (59·4) followed by South Arcot (35·3); while Ganjam recorded the lowest (13·5). This variation shows the defectiveness of registration, and the attention of the Collectors of some of the districts has been invited to the matter.

The increase in the mortality of the year occurred under all the heads of disease except fevers. Cholera prevailed with great severity, and the epidemic was the severest since 1877. The deaths from the disease numbered 98,773 or 3·5 per 1,000, nearly treble the number of the previous year (35,228). All the districts were affected, and in no month of the year was cholera absent from the Presidency. In the districts of Vizagapatam, Ganjam and South Canara the mortality was slight, but only in Tinnevelly was the death-rate from the disease lower than in 1890. The districts which suffered most were South Arcot with a death-rate of 8·8 per 1,000, Madura 5·9, Bellary Anantapur 5·6, Cuddapah 5·5, and Chingleput and Coimbatore 5·0 each. Of the 77 towns in the Presidency 65 sufferred from cholera, Palin town again figuring first with a ratio of 21·9, Nellore, Adoni, Anantapur, Chidambaram, and Dindigul coming next with ratios ranging from 18·9 to 10·6 per 1,000. Out of 44,449 villages 8,977 or 20·2 per cent. were affected by cholera. "The reports of the year," the Sanitary Commissioner (Surgeon-Lieutenant Colonel Laing) states, "do "not cast any new light upon the etiology of the disease, but it may be safely assumed "that, however obscure the origin and behaviour of the epidemic may be, yet its "spread in a place depends largely on the sanitary conditions present, and the very "inferior water-supply. In consequence of deficient rainfall in 1891, many of the "tanks and wells, which were drinking water supplies, became dry, and people had to "use any water they could obtain. Further, owing to the drought, the water in the "tanks and wells was much reduced in quantity, and therefore had a much larger "percentage of dissolved and suspended impurities."

The registered deaths from small-pox rose from 28,092 in 1890 to 41,322, representing 1·4 per 1,000 of the population. Children, as usual, were the chief sufferers, just over a half (54·1 per cent.) of the mortality having been recorded among those under twelve years of age. This, however, is an improvement on the previous year, when the percentage was 65·8, "and shows," the Government observe, "how much local bodies "can yet effect, if they pay due attention to infantile vaccination." The disease was present in all the districts, but although the mortality was much greater compared with 1890, the death-rates of eleven districts were lower. The highest small-pox mortality was recorded in Kistna (5·3), Malabar (2·7), South Arcot (2·6), and Madura (2·4). The towns suffered more in proportion than the districts, the death-rate of the former being 2·1 against 1·4 in the latter. Some of the municipal towns suffered very severely. Calicut headed the list of 44 out of a total of 55, in which deaths from the disease occurred, with a ratio of 20·4, the rate for the district being 2·7. This high mortality the Sanitary Commissioner ascribed to the unsatisfactory manner in which vaccination is carried on in this town. The special attention of the Municipal Council has since been drawn to the matter.

Fevers were the cause of 247,029 deaths, representing a ratio of 8·6 per 1,000 of population, against 262,855 or 9·2 in 1890. The decrease was general, all the 22 districts but six having recorded a lower mortality, mainly owing to the absence of influenza, which was very prevalent in 1890. Of the districts, Kurnool, Madras, Nilgiris, Cuddapah, and Vizagapatam, suffered most severely, their death-rates varying from 21·1 to 14·3 per 1,000. The district presidency rate under this head was 8·8, while that of the municipalities was 2·4 less (6·4), the lower rate of the towns being partly due "to the indiscriminate classification of all diseases with inflammatory "symptoms as fever in the more rural or less-educated tracts of the country."

From dysentery and diarrhœa there were 34,223 deaths registered, yielding 1·2 per 1,000 against 26,608 or 0·9 in 1890. As usual, Madras recorded the highest district

death-rate of 11·5 per 1,000, followed by Chingleput with 4·2; in the remaining districts the mortality ranged from 2·2 in Malabar to 0·2 in Ganjam.

Bombay. Registration of vital statistics in the Bombay Presidency during 1891 was attended with fairly satisfactory results. In the case of several districts, however, improvement is still required. The total number of births recorded in 1891 was 682,677 or 36·27 per 1,000 against 641,115 or 38·97 in 1890. This falling off in the ratio, is however, only apparent, as the results of the year under notice were calculated on the Census figures of 1891 (18,820,346) showing an increase of 2,402,630 on the previous Census population of 1881, on which the rates of 1890 were based. Of the 24 districts in the Presidency, all but five recorded more births than in 1890, and of these the most marked case was the City of Bombay with a birth-rate of only 18·86. Eleven districts registered birth-rates of over 40 per 1,000 and seven of over 30 per 1,000.

Under all the chief diseases except small-pox, there was an increased mortality, and the total number of deaths registered rose from 463,616 to 513,132 or 27·26 per 1,000, which was made up of district ratios ranging from 42·11 in Broach to 14·99 in Upper Sind Frontier. There were also great differences in the ratios of towns (ranging from 10·25 to 64·01 per 1,000). The Bombay Government proposed calling the attention of the district officers to the necessity for improving registration in the districts in which the results were unsatisfactory. Only two districts, the City of Bombay and Broach, registered higher death-rates than birth-rates, the excess in the case of the former being 10·29 per 1,000, while in the latter there was very little difference. The mortality amongst young children was, as usual, very high. Of the total deaths 22·18 per cent. occurred among infants under one year of age, and between one and five years the percentage was 21·61, so that the deaths among children under five years of age formed 43·79 per cent. of the total mortality of the Presidency.

Cholera caused 17,850 deaths or 14,590 more than in 1890, the ratio being equal to 0·95 per 1,000 of population. All the districts were affected, but in several the number of deaths was very small. The epidemic was principally confined to the Deccan districts of Bijapur, with 5,064 deaths or 6·36 per 1,000, Sholapur 2,442 or 3·25, Poona 2,316 or 2·18, and Ahmednagar 2,284 or 2·57, together accounting for 12,106 of the total cholera mortality. These results, it is stated, were probably due, for the most part, to the unfavourable nature of the season and the scarcity of water in the Deccan. The disease was present the whole year, but the great majority of the deaths (15,533) occurred in the five months May to September, July and August being the most fatal months, when 3,692 and 4,443 deaths respectively were recorded. Of the 25,143 villages in the Presidency, 1,594 were affected by cholera.

There were only 1,491 deaths from small-pox recorded as compared with 2,877 in 1890, and a decennial mean of 5,087. Two districts (Thar and Parkar and Upper Sind Frontier) were entirely free from the disease, while in no district was the mortality severe. The highest district ratio was 0·24 per 1,000 in Khandesh. According to age, 27·50 per cent. of the deaths occurred among infants under one year of age, and 50·17 per cent. among children between one and twelve years of age.

Under fevers, 368,913 deaths were registered, representing a ratio of 19·60 per 1,000, and showing an increase of 24,016 on the number of the previous year. The increase was spread over 10 of the 24 districts, Broach heading the list with 37·30 per 1,000 or 3·52 in excess of its fever rate of 1890. Seven other districts also recorded fever death-rates higher than the Presidency rate, ranging from 31·44 to 20·17. The most fatal month was December, when 50,954 deaths were reported which was attributed to a return of the influenza epidemic in the latter portion of the year.

To dysentery and diarrhœa 37,728 deaths were ascribed, equal to 2·00 per 1,000, against 36,037 in 1890. The death-rate was lower in all the districts but eight, the highest recorded being 5·69 in Belgaum, Dharwar coming next with 4·82, Bijapur 4·71, Khandesh 4·22, Nasik 4·18, and Ahmednagar 3·11. In no other district was the Presidency rate reached.

Berar. The vital statistics of Berar for 1891 point to steady progress towards greater accuracy in registration. In every district more births were registered than in the previous year, the aggregate number being 121,755, an excess of 10,305 on 1890. Calculated on the Census population of 1891, which exceeded that of 1881 by 2,840,406, the birth-rate was 42·8 per 1,000. The district rates ranged from 47·6 in Akola to 34·8 in Wun, the low rate of the latter being attributed to defective registration. The year was an unhealthy one, owing to the prevalence of cholera and bowel complaints in more than average intensity. The deaths aggregated 115,558 or 40·6

per 1,000, an excess of 22,538 over the number registered in 1890. The increase was common to all districts, the death-rates of which ranged from 47·6 in Akola to 30·0 in Wun. The urban and rural mortality rates were 40·9 and 40·6 respectively.

There was an increase in mortality under all the chief diseases except small-pox. Deaths from cholera rose from 847 in 1890 to 7,958 or 2·8 per 1·000. With the exception of April and May, the disease prevailed during each month of the year, attaining its maximum in August and September, when 3,139 and 3,081 deaths respectively were registered. Of the districts the principal sufferers were Buldana and Basim, which recorded cholera death-rates of 4·0 and 3·6 per 1,000; the lowest mortality-rate 1·2, was returned by Wun. The departmental reports, the Sanitary Commissioner (Dr. Little) states, do not cast any new light upon the etiology of cholera. Civil Surgeons paid considerable attention to the investigation of the disease. They attributed the outbreaks to a general prevalence of local insanitary conditions rather than to any special exciting cause, and the Resident directed that this opinion should be impressed upon Taluk Boards, so as to bring home to them the vast importance of village sanitation. The deaths were all reported from 532 out of the total 5,655 villages.

Small-pox was remarkably quiescent during the year. Only 34 deaths were recorded as compared with 324 in 1890, and the death-rate was only ·01 per 1,000, results which the Army Sanitary Commission notice, bear evidence of the efficiency of vaccination. Five out of the six districts were affected, Wun the most severely with 15 deaths. Ellichpur was exempt from the disease. All the deaths but six occurred among children under 12 years of age.

The mortality ascribed to fevers was very severe, amounting to 49,850 or 17·5 per 1,000 against 47,894 in 1890. According to districts, the death-rate ranged from 21·3 in Wun and 20·9 in Akola, to 11·9 and 14·2 in the Basim and Buldana respectively. September, October, and November were the months of greatest fever prevalence, and the first four months of least prevalence. Influenza, which caused a most abnormal fever mortality in April of 1890, was absent during the year under notice.

Dysentery and diarrhœa accounted for 22,007 of the year's deaths, yielding a ratio of 7·7 per 1,000 of population, an increase of 8,679 on the mortality of 1890. The provincial ratio was made up of district rates ranging from 13·3 in Ellichpur to 2·1 in Wun.

IV.—JAILS.

Sickness and mortality in 1891.

The health of the jail population of India during 1881 was on the whole satisfactory In the admission and constantly-sick rates there was a substantial reduction as compared with the previous year, the former having declined from 1,142 to 979 per 1,000 of average strength, and the latter from 36 to 34 per 1,000; while the death-rate fell from 30·68 to 30·19. Of the ten provinces, six returned a higher jail death-rate than in 1890, the most noticeable case being Assam, where the health of the prisoners during 1891 was markedly unsatisfactory. The health statistics of the Madras jails were also very unfavourable. Cholera was present in some jails in all the provinces, except the Central Provinces, Berar and Coorg, and accounted for 324 deaths, equal to a ratio of 3·48 per 1,000 of average strength against 146 or 1·66 in 1890. Fevers also were slightly more fatal, but dysentery and diarrhœa showed a somewhat decreased mortality.

The following statement shows the sickness and mortality among all classes of prisoners in the jails and subsidiary jails of the several provinces for 1891, as compared with the previous year:—

Provinces.	1891.			1890.		
	Ratio per 1,000 of Average Strength.			Ratio per 1,000 of Average Strength.		
	Admissions.	Daily Sick.	Deaths.	Admissions.	Daily Sick.	Deaths.
Bengal - - - -	1,170	38	30·97	1,251	39	32·27
North-Western Provinces and Oudh	781	34	27·62	990	36	33·54
Punjab - - - -	1,746	40	28·30	1,937	47	31·23
Burma - - - -	891	34	30·12	1,002	38	28·24
Central Provinces - - -	792	28	30·37	1,017	31	26·06
Assam - - - -	1,742	68	52·11	1,987	56	36·29
Coorg - - - -	1,458	50	32·64	2,295	63	30·96
Madras - - - -	637	21	35·33	731	24	23·85
Bombay - - - -	676	25	32·44	827	27	31·98
Berar - - - -	440	21	11·29	678	21	18·17
India - - - -	979	34	30·19	1,142	36	30·68

Bengal.

The vital statistics of the Bengal jails for 1890 show a further improvement in the health of the prisoners. The rate of admissions to hospital fell from 1,251 per 1,000 of average strength in 1890 to 1,170, the daily sick-rate from 39 to 38, and the death-rate from 32·27 to 30·97, "a result," the Lieutenant-Governor observes, "which "is most satisfactory, and should encourage superintendents of jails to continue their "exertions in the direction of improved sanitation." The reduction in mortality was to an extent due to an alteration in the rules regarding the release of sick prisoners. The number of such releases rose from 39 in 1890 to 105 in 1891, "and it can hardly "be doubted" the Government of India observe, "that, but for these releases "the mortality would have been higher." Among all classes of prisoners the deaths numbered 493, of which 54 were from cholera, 147 from bowel complaints, and 141 from fevers. Of the total deaths 454 occurred among convicts representing a ratio of 31·4 per 1,000 of average strength against 33·2 in 1890. All but 10 of the 454 convict deaths took place in other than subsidiary jails, and of these only 150 were received into jail in good health. while 153 were found to be in indifferent health, and 141 in bad health. Dr. Lethbridge states that from his experience of a large number of jails in all the provinces of India, he can safely say that there is no other province which receives so many moribund prisoners. Of the 46 jails in the province, 21 returned a death-rate exceeding the provincial rate, and of these six recorded mortality rates of over 50 per 1,000, viz., Purnea 131·2, Shahabad 104·9, Rangpur 94·3, Puri 91·2, Dinajpur 88·3, and

Saran 62·2. The high rate in the Purnea jail was the result of 12 deaths, of which six were of prisoners admitted in very bad health, who were at once sent to hospital, where they died a few days afterwards. Many other prisoners were admitted in this jail in bad health, which was accounted for by the general unhealthiness of the district. This cause also, in the opinion of Dr. Lethbridge, influenced the death-rate in Dinajpur jail, where nine of the 15 deaths were of convicts admitted in indifferent health, and four in bad health. Seven of these cases had been less than six months in jail. Cholera was the cause of the high mortality in the Shahabad jail, contributing 12 out of the total 15 deaths. The large mortality in the Rangpur jail was due partly to an epidemic of cholera, and also to the unhealthiness of the prisoners received from this malarious district. Out of 23 prisoners who died, 12 were admitted in bad health, 10 in indifferent health, and only one in good health. The Puri jail is a small one, and its high death-rate (91·2) represented six deaths, two of which were due to diarrhœa, and one to cholera. Cholera was also the chief cause of the mortality in Saran jail, five fatal cases out of a total of 17 deaths having resulted from the disease. In six jails there were no deaths, and in several there was a very satisfactory decrease in mortality as compared with previous years.

North-Western Provinces and Oudh.

The year 1891 in the North-Western Provinces and Oudh being comparatively healthy, there was an improvement in the health of the jail population. The admissions into hospital per 1,000 of average strength fell from 990 in the previous year to 781, the daily average sick from 36 to 34 per 1,000, and the death-rate from 33·54 to 27·62, which was the lowest recorded since 1866, when it was 22·85. This result, it is stated, speaks well for the excellence of the sanitary arrangements maintained in the jails. The most fatal diseases were cholera, with 95 deaths (3·63 per 1,000) dysentery and diarrhœa, 201, and respiratory diseases 157. Cholera had been steadily increasing since 1888; in the year under notice it affected 14 jails (four being Central prisons) as compared with eight in 1890; and the disease was an important factor in raising the death-rate at Lucknow, Benares, Fyzabad, and Bareilly. Of the total 780 deaths, 726 occurred among convicts, yielding a ratio of 27·78 against 33·62 in 1890. This average death-rate was exceeded in 26 jails, the highest being 82·57 in Hamirpur, though this is an improvement on the ratio of the previous year. Of the 16 convicts who died in this jail, 4 were admitted in very bad health, and 8 in bad health. Gorakhpur jail came next with a mortality rate of 74·89 against 86·75 in 1890, the bad state of health of convicts entering the jail being the chief cause of this high death-rate. The construction of a new jail in this district was about to be commenced. To the same cause was attributed the Benares jail death-rate of 62·23. Of the 26 prisoners who died in this jail, only five were admitted in good health. Five other jails recorded death-rates of over 50 per 1,000, four of over 40, and 12 of over 30 per 1,000. Much was done during the year in improving the sanitary condition of the jails, in accordance, in many cases, with the recommendation of the Jail Committee.

Punjab.

The health of the jail population of the Punjab during 1891 was, on the whole, satisfactory. There was overcrowding in seven jails, the chief reason assigned being the prevalence of cholera in adjacent districts which prevented the transfer of prisoners to other jails. The matter of overcrowding was receiving attention, with the view of ascertaining which jails were more commonly liable to it than others. Admissions to hospital were in the ratio of 1,746 per 1,000 of average strength against 1,937 in 1890. The daily average sick-rate fell from 47 to 40, and the death-rate from 31·23 to 28·30. This is the third year in succession in which the mortality in the Punjab jails has been below that of the free population, "and this," it is observed, "though, "while the prison statistics are quite accurate, many deaths occur among the free "population which must escape report." In three jails out of the total of 33 there were no deaths; in 15 the death-rate was less than 15 per 1,000, while in 14 others the provincial rate was exceeded, the ratios ranging from 57·76 in Dera Ghazi Khan, to 34·87 in Lahore central jail. Among the convicts the rate of mortality was 27·94 per 1,000 as compared with 31·89 in the previous year. Under all the principal diseases the deaths were fewer than in the previous year. From dysentery and diarrhœa there was a considerable decrease in the number of convict deaths, from 84 in 1890 to 51; there was also a satisfactory fall in the deaths from respiratory diseases, from 160 to 121, which would have been still more marked, it is stated, "had not so many "of our jails suffered from influenza followed by pneumonia of a severe type." From cholera there were 12 deaths, an increase of seven on the number recorded in the previous year. These were confined to the two jails, Ludhiana and Lahore, which returned six deaths each. In both instances the prisoners were moved into camp with

satisfactory results. In several jails there was a great improvement in the health of the convicts. Among them may be instanced the Amritsar jail, which has always been one of the most unhealthy in the province, with a death-rate of less than 12 per 1,000. The Dharmsala jail is another that has been generally unhealthy, but which showed a greatly reduced mortality, viz., from 69·30 per 1,000 in 1890 to 9·90 in 1891. The death-rate at Rawal-pindi also fell from 26·72 to 9·92. These results were greatly due to the care bestowed by medical officers on matters affecting the health of the jails under their charge. The high rate of mortality in the Dera Ghazi Khan jail (57·76) was the result of 16 deaths, six of which were due to remittent fever, and four to dysentery. The same fever was also the cause of four deaths, out of a total of 10, in the Kohat jail, whose mortality rate rose from 6·89 per 1,000 to 54·36. The next highest death-rate (51·28) was returned by the Gujranwala jail, where out of 20 deaths nine were due to respiratory affections. It is noticed that the comparatively severe mortality among convicts who had been a long time in jail, which characterized the years 1887 and 1888, did not prevail in 1891. In fact, except in the case of convicts who had been more than seven years in jail, and regarding whom the rate of mortality (47·62) was still high, statistics show that a higher rate of mortality in proportion to the length of sentence had almost ceased to prevail.

Burma. There was less sickness among the prison population of Burma as compared with 1890, but owing to severe outbreaks of cholera the mortality was higher. For the whole province the admissions to hospital were in the ratio of 891 per 1,000 of average strength in 1891 against 1,002 in the previous year; the ratio of daily average sick was 34 or 4 per 1,000 less, while the death-rate rose from 28·24 to 30·12 per 1,000. Of the chief diseases cholera contributed 52 deaths out of 67 cases, against 19 and 29 respectively in 1890. The disease was present in eight of the 30 jails, but only in three of them did it assume epidemic proportions. Serious outbreaks occurred at Toungoo and Moulmein. At the former 28 prisoners died out of 37 attacked, and at the latter 14 out of 15 cases proved fatal. A serious epidemic of cholera also occurred at Bassein jail, where out of seven cases five were fatal. In all these instances cholera prevailed in the town before it broke out in the jail. All the cholera deaths but two occurred in the jails of Lower Burma. Dysentery and diarrhœa accounted for 86 deaths, and fevers 26. Respiratory diseases were more fatal, the deaths having increased from 47 in 1890 to 53. During the year 28 convicts were released on account of serious illness. The majority had not been a year in jail, and were in bad or indifferent health on admission. Anæmia and diarrhœa were the chief disorders from which they suffered. Of the total 345 deaths 333 occurred among convicts, equal to a ratio of 30·10 per 1,000 of their average strength.

Central Provinces. Although there was an increase in the daily average strength of the jails in the Central Provinces in 1891, there was a marked decrease in the number of admissions to hospital as compared with the previous year. The sickness, however, must have been of a more serious character, as there was an increased mortality. Among all classes of prisoners the admission-rate was 792 against 1,017 in 1890, the daily sick rate 28 against 31, and the death-rate 30·37 against 26·06. The decrease in the admissions was attributed to the immunity which the jails enjoyed from epidemics. The chief causes of the increased mortality were dysentery and diarrhœa, from which there were 47 deaths, or 13 more than in 1890. Of the total 142 deaths 137 were of convicts, the rate per 1,000 of average strength being 30·7 against 26·5 in the previous year. The mortality in some jails was extremely high. Damoh again came first with a death-rate of 146·6, the result of 13 deaths; Hoshangabad followed with 89·3 (14 deaths), which is an increase of 67·9 on the ratio of 1890; Sambalpur with 58·4, but it appears that a large proportion of the deaths in this jail resulted from causes which had nothing to do with residence in jail; and Saugor with 55·8. It is stated that the physical condition of prisoners received into the jails of Damoh and Saugor goes far to explain the high ratios of sickness and mortality. At the same time, defective drainage of the jail site had in both cases, in the Chief Commissioner's opinion, something to do with the matter, and measures have since been taken to remedy the defects, with satisfactory results. As regards Hoshangabad, only three of the 12 convicts who died were admitted to jail in good health.

Assam. The health statistics of the jails in Assam for 1891 compare very unfavourably with those of the previous year. Among all classes of prisoners there were 2,808 admissions to hospital, representing a ratio of 1,742 per 1,000 of average strength against 1,987 in 1890; the ratio of daily average sick rose from 56 to 68 per 1,000, and the death-

rate from 36·29 to 52·11. This large increase in the death-rate was almost entirely due to heavy mortality among the prisoners returning from the Lushai Hills jail, where they had been sent for road work. The health of the prisoners was excellent from the date of their arrival up to the end of March, when the occurrence of the Manipur calamity rendered their immediate withdrawal necessary. On the road between Silchar and Sylhet, cholera broke out amongst the prisoners, the disease being at that time prevalent along the road. The prisoners returned with their health impaired by the journey, and many succumbed to the disease. Of the total 84 deaths in the Assam jails, all but three occurred among convicts, being in the ratio of 54·29 per 1,000 of average strength against 39·21 in 1890. Cholera accounted for 13 deaths, dysentery and diarrhœa 38, and respiratory diseases 7. Of individual jails the greatest number of deaths took place in that of Sylhet, viz., 28, or 201·15 per 1,000, against 8, or 44·14, in 1890. Of these, 20 occurred among the Lushai prisoners. The Shillong jail also returned a high mortality (8 deaths equal to 242·05 per 1,000 against *nil* in 1890); and four of these eight were among the prisoners returned from the North Lushai Hills jail. During the year considerable sanitary improvement was made in some of the jails, chiefly in conservancy. The water used in the jails is filtered, and the supply is obtained from the best sources available.

Madras.

The health statistics of the jails in the Madras Presidency for 1891 are on the whole of an unfavourable character, and with the two exceptions of 1882 and 1889 the death-rate is the highest recorded for ten years. There was less sickness than in 1890, the ratio of admissions to hospital having declined from 731 per 1,000 of average strength to 637, and the daily average sick-rate from 24 to 21 per 1,000. On the other hand, the mortality was far higher. Among all classes of prisoners the deaths rose from 213, or 23·85, to 347, or 35·33 per 1,000. The increase was almost entirely due to cholera, which caused 90 deaths, an increase of 68 on the number of the previous year. From dysentery and diarrhœa also the deaths were considerably in excess of 1890, viz., 97 against 64. According to individual jails the ratio of deaths ranged from 66·00 in the Penitentiary, Madras, and 64·99 in Rajamundry jail, to 6·33 in Bellary. The Cochin jail was again free from death. The average jail death-rate of the Presidency was exceeded by 10 of the 22 jails. Cholera was the cause of the heavy and exceptional mortality in the usually healthy Penitentiary jail. Thirty-six deaths out of a total of 47 resulted from this disease, and necessitated the removal of the bulk of the prisoners into camp. In the previous year there were only 14 deaths, equal to 20·05 per 1,000, in this jail. There was no epidemic in the Rajamundry jail to account for the large number of 35 deaths, which is an increase of 20 on the previous year's mortality. Nine of the deaths were due to beri-beri, and 17 to dysentery and diarrhœa, and all but seven of the prisoners who died were returned as in good health on admission. The Inspector-General states:—"I can "find nothing in the seasonal occurrence of disease to suggest an explanation. The "matter is one which requires the careful observation of the Medical Officer, and "the state of health of the jail will be watched during the current year." In 13 other jails the recorded death-rate was higher in 1891 than in the previous year. The high death-rate of 53·06 in Parvatipur jail, though lower than recorded for five years, was due to the low state of health of the prisoners when first admitted from the malarious tracts in the neighbourhood. In Guntur jail epidemic cholera was entirely the cause of the high mortality (50·70), eight out of the nine deaths resulting from this disease. Trichinopoly jail, which had a death-rate of 49·72, returned eight deaths from cholera out of a total of 48, and 20 from diarrhœa. These same causes accounted for eight and 13 deaths, respectively, out of a total of 30, in Coimbatore jail. An outbreak of cholera also caused 10 of the 30 deaths in Vellore jail. Of the total 347 deaths, 321 were of convicts, equal to 37·41 per 1,000 of their average strength against 191 or 24·01 in 1890.

Bombay.

There was less sickness among the jail population of the Bombay Presidency during 1891 as compared with the previous year, but a slightly increased mortality, which occurred entirely amongst under-trial prisoners. Among all classes of prisoners the rate of admissions to hospital per 1,000 of average strength was 676 against 827 in 1890, the daily sick-rate 25 against 27, and the death-rate 32·44 against 31·98. More than half (138) of the 253 deaths was contributed by the jails of Sind, with a daily average strength of 2,166, or not much more than one-fourth of the total of 7,799 in all the jails and lock-ups. Excluding the Sind jails, the Presidency ratio drops from 32·4 to 19 7, while dealing with the jails and lock-ups of Sind as a separate group, the ratio of deaths for that province stands at 65·6 per 1,000 of average strength.

Many jails were overcrowded during the year; but that this did not cause unhealthiness is borne out by the fact that those jails which were most continuously overcrowded enjoyed the greatest immunity from sickness. Of the total 253 deaths, 235 occurred amongst convicts, equal to a ratio of 33·7 per 1,000 of average strength, being identically the same as for 1890. Cholera was very little prevalent in the jails; only three were affected, and these yielded nine cases, with three deaths. The chief causes of mortality were respiratory diseases, from which the deaths among the convicts rose from 71 in 1890 to 103; of these 75 occurred in the Upper Sind jails. On the other hand deaths from dysentery and diarrhœa declined from 57 to 35, and from anæmia and general debility from 19 to 12. The jails showing the highest death-rates were the Nara Gang, 109·8; Hyderabad, 81·7; Nasik, 57·7; Shikarpur, 57·4; and Dhuliakot, 56·7; all, with the exception of Shikarpur, being considerably in excess of the ratios of 1890. In the Nara Gang the deaths numbered 47, of which 29 occurred in the month of December, the result of influenza. The epidemic commenced in December, and the ravages caused by it throughout the province of Sind, the Inspector-General states, during the past cold weather will be remembered for many a long day in the villages. Nearly 200 of the prisoners in the gang were suffering from it at one time. Many of the cases of influenza developed into pneumonia. In four jails there were no deaths during the year, and in nine the death-rate was below 33 3 per 1,000.

Berar.

The health of the prison population of Berar during 1891 was again satisfactory. The ratio of admissions to hospital was 440 per 1,000 of average strength against 678 in 1890; the daily sick-rate was 13 per 1,000 against 21, while the death-rate fell from 18·17 to 11·29. The total number of deaths was 12, and of these, nine were of convicts. There was no epidemic of any disease, and cholera was entirely absent from the jails. In two of the seven jails there were no deaths. The Resident agrees with the Inspector-General that in addition to good management these satisfactory results were very likely due, not only to the absence of overcrowding, but also to the ample provision of unencumbered space within the walls of the jails.

V.—VACCINATION.

General results.

During 1891–92 there were 5,882,683 persons successfully vaccinated in the several provinces of India. According to age, nearly $2\frac{1}{4}$ millions of the total were children under one year of age, and nearly $2\frac{3}{4}$ millions were children between the ages of one and six years. The proportion of population protected against small-pox was equal to 26·78 per 1,000, which average was made up of ratios ranging from 54·31 in Coorg to 19·10 in the North-Western Provinces, and 19·08 in Burma. In the vaccination of infants the best results were, as usual, obtained in Berar, where 67·9 per cent. of the children born during the year (estimated at 40 per 1,000) were protected. Bombay Presidency came next with a percentage of 58·4, followed by the Central Provinces with 56·8, and the Punjab with 54·5. Of the remaining provinces, only in the North-Western Provinces and Oudh did the successful cases among infants equal 20 per cent. of the estimated births.

Statement showing the total number of persons successfully vaccinated during the year 1891–92 :—

Province.	Population among whom Vaccination was carried on (Census of 1891).	Number of Persons successfully vaccinated.	Ratio of successful Vaccinations per 1,000 of Population.	Number of Children successfully vaccinated.		Percentage of Children born during the Year (calculated at 40 per 1,000 of Population) successfully vaccinated.
				Under One Year of Age.	Between One and Six Years of Age.	
Bengal - - -	67,570,784	1,614,501	23·89	292,438	1,156,139	10·8
North-Western Provinces and Oudh.	47,146,327	900,731	19·10	378,512	432,777	20·1
Punjab - - -	20,553,982	686,879	33·42	448,491	130,753	54·5
Central Provinces - -	*11,029,618	437,312	39·64	250,637	131,054	56·8
Berar - - -	2,850,009	102,596	35·90	77,482	14,950	67·9
Burma - - -	8,097,014	154,528	19·08	35,439	67,784	11·0
Assam - - -	5,634,258	184,152	32·68	22,256	118,353	9·9
Madras Presidency - -	*30,869,266	970,504	31·43	210,652	515,657	17·1
Bombay Presidency - -	25,710,798	821,196	32·32	600,634	171,075	58·4
Coorg - - -	173,055	10,284	59·42	685	4,188	9·9
Total - - -	219,635,111	5,882,683	26·78	2,317,226	2,742,730	26·3

* According to census of 1881.

Bengal.

Although there was an increase of 92 to the vaccination staff of Bengal in 1891–92 there were 192,890 fewer operations performed, the total number of persons vaccinated having decreased from 1,833,978 in the previous year to 1,641,088. The decrease occurred in all the circles except Ranchi, and was attributed to various causes, such as paucity of subjects owing to the prevalence of small-pox in 1890, when children of very tender age were allowed to be vaccinated, and large numbers of elderly people resorted to vaccination ; also to the prevalence of malarious fever and influenza. Of the total number of operations, 1,626,855 were primary cases, of which 98·90 per cent. were successful. According to age, 292,438 of the successful primary vaccinations were of children under one year of age, and 1,155,556 were of children between one and six years old. For the whole province the persons successfully vaccinated per 1,000 of population represented a ratio of 23·89. In connexion with this outturn of work the Army Sanitary Commission remark :—" The most important practical questions are, " How far is the infant population, which is being added year by year, protected " by successful vaccination, and what relation does the mortality from small-pox in " each district bear to the successful vaccinations which had been recorded in it ? " In answer to the first question there is no doubt that a vast amount remains to " be done." And they point out that, according to the statistics of the Sanitary Commissioner, there are 2,474,152 infants available for vaccination every year, and that during 1891–92 only 292,438 were successfully vaccinated. The greater part

of the year's work was, as usual, carried on by human lymph, but bovine lymph was used to start the operations in each district. In addition to the animal lymph depôt at Calcutta, which has been improved, one has now been established in Darjeeling. "With this depôt in the Hills," Dr. Gregg says, "and the central depôt in Calcutta, "the Vaccination Department is now in a position to dispense with lymph obtained "from the human subject and to supply the whole of Bengal with calf lymph." During the year the reorganisation of the Vaccination Department was completed, and under the new scheme the executive supervision of the work has been transferred to the district Civil Surgeons, while the former Deputy Superintendents and three of the six Superintendents have been ablolished. The Army Sanitary Commission remark that by this measure Civil Surgeons will be able to aid more largely and more directly in the important work of vaccination.

Punjab.

In the Punjab the total number of vaccinations performed during 1891–92 was 812,700, as compared with 850,142 in the previous year. The decrease of 37,442 was, however, only in re-vaccinations, and was due to an order forbidding the re-vaccination of children until seven years had elapsed since the previous successful vaccination. It is well, the Lieutenant-Governor considered, that this order had been issued, "otherwise our vaccination operations would become, to a certain extent, "a sham, as vaccinators would, with a view to increasing their tale of work, go on "vaccinating over and over again the children of such parents as felt no objection "to vaccination." Of the total vaccinations, 620,604 were primary cases, of which 94·85 per cent. were successful. The results of inspection testified to the accuracy of this ratio of success, for out of 14,222 cases inspected the Sanitary Commissioner found 96 per cent. efficiently vaccinated; and this was further corroborated by the results of inspections of other officers of the vaccination staff. Children born during the year were protected to the number of 448,491, equal to 54·5 per cent. of the births estimated at 40 per 1,000, and of children between one and six years 130,753 were successfully vaccinated. Of the total population of the province 33·42 per 1,000 were protected from small-pox against 37·15 in 1890–91. Vaccination with animal lymph continued to make satisfactory progress. There were 702,004 operations performed by this method against 581,664 in 1890–91. "In 16 of the 31 districts "of the province practically the whole of the work of the district staff was done with "animal lymph, and in eight of the remaining 15 districts the great majority of the "operations were done with the same kind of lymph." The use of animal lymph, the Sanitary Commissioner says, is making the work of vaccination more popular than it was, as it obviates the necessity of using children as vaccinifers, though a good deal of passive opposition is still met with in Hindus, and especially Khatris.

North-Western Provinces and Oudh.

Vaccination work in the North-Western Provinces and Oudh continued to make satisfactory progress during 1891–92. The total persons vaccinated numbered 1,059,981, being an increase of 70,812 on the operations of the previous year. The increase, however, was not general, as there was a decrease in 14 districts, of which only two were in Oudh, and in these two the number of persons successfully vaccinated per 1,000 of population compared favourably with the provincial average. Of primary vaccinations there were 1,017,266, and of these 91·66 per cent. were successful. Among infants there were 7,781 fewer successful cases than in 1890–91, the number having fallen from 386,293 to 378,512; while among children between one and six years of age the number rose from 388,703 to 432,777, an increase of 44,074. The Sanitary Commissioner attributed the decline in the successful vaccinations among infants to the smaller number of births during the year, but in fact the proportion of infants vaccinated was actually greater than in the previous year. The proportion of the population successfully vaccinated was extremely low, only 19·10 per 1,000, almost the same as in 1890–91. In consequence of the action taken by the Local Government in drawing the attention of the municipal authorities to the advantages of the Vaccination Act, 66 municipalities out of 103 were at the close of the year brought under the provisions of the Act, and in three more proceedings for its extension were pending. In addition, the Act was in force in five cantonments, and steps were about to be taken with a view to extending it to the remaining cantonments of the province. For the first time vaccination was carried on in the province without a supply of lymph from England. Depôts for the production of animal lymph were maintained at nine districts, seven of which were in Oudh.

Burma.

The total number of vaccinations performed in Lower Burma during 1891–92 was 130,438, being 12,807 less than in the previous year. The decrease was chiefly

noticeable in the five districts of Prome, Thongwa, Henzada, Thayetmyo, and Toungoo, and was attributed chiefly to the absence of small-pox. The Civil Surgeon of Prome, reported that the attitude of the people was very favourable to vaccination, particularly in the town, where the total absence of small-pox has followed upon the introduction of compulsory vaccination. The number of persons primarily vaccinated was 92,748, with a percentage of success of 85·15, which was much below that of other provinces. Of the total 78,979 successful primary vaccinations, 20,535 were of children under one year of age, which, as the Army Sanitary Commission notice, is not very satisfactory when compared with the registered births (95,332) of the year. Of children between the ages of one and six years, 40,135 were protected. During the year the Vaccination Act was extended to the municipal towns of Yandoon, Thaton, and Mergui, and to the cantonment of Thayetmyo. At the close of the year the Act was in force in all the muncipalities but seven, of which Pegu is the most considerable, and in all cantonments but one.

In Upper Burma 61,454 persons were vaccinated during 1891–92, being an increase of 18,542 on the number of the previous year. Of this increase Mandalay contributed 10,722, which was mainly due to the extension of the Vaccination Act to the municipality and cantonment. There were 61,220 primary cases, of which 85·35 per cent. were successful. Besides Mandalay, the Vaccination Act was extended during the year to the municipalities of Myingyan, Pagan, Salin, Pyinmana, and Yamethin. There appears to be a widespread prejudice against vaccination throughout the whole province.

Assam.

Further progress was made in vaccination work in Assam during 1891. The total number of vaccinations was 206,331, being an increase of 19,221 on the previous year. The increase was spread over all the districts except Kamrup, Darrang, and Sylhet. In the Naga Hills district there was an increase of 10,430 operations, and in the Goalpara district of 4,137. The work done in the tea gardens decreased considerably, from 13,387 cases to 9,285; there was however a slight increase in the percentage of successful cases, from 80·18 to 82·76. For the whole province the primary operations numbered 197,572, of which 91·59 per cent. were successful against a corresponding percentage of 86·58 in 1890–91. This improvement was attributed to the better quality of the lymph from the depôt at Shillong, which was established in 1890, and the success of which the Chief Commissioner now considers assured. Exclusive of tea gardens, but including dispensary work, 22,256 of the 184,225 successful primary cases were of children under one year old, and 118,353 were of children between one and six years of age. A comparison of the number of infants successfully vaccinated with the registered births of the year (143,548) shows, notwithstanding the steady progress which had been made of late years, as the Army Sanitary Commission point out, "how much still remains to be done before the Vaccination Department can expect to exercise efficient control over small-pox." There was also an improvement in inspection work. Out of the total 206,331 vaccinations, 101,197 cases were verified, and of these 92,978 or 91·88 per cent. were found successful, as compared with 89,575 or 90·83 per cent. in the previous year. The Compulsory Vaccination Act was further extended during the year, and has now been introduced into nine municipalities and stations of the province.

Central Provinces.

In the Central Provinces there was an increase of 5,568 in the total vaccinations as compared with the results of the previous year, the number having increased from 457,678 in 1890–91 to 463,246 in 1891–92. Of these, 414,259 were primary operations, with a percentage of success of 96·24. The successful vaccinations in children born during the year numbered 250,637, and in children between one and six years, 131,054. Estimating the births at 40 per 1,000 of population, 56·8 per cent. were protected against small-pox; and the number of persons who were protected per 1,000 of the population was 39·64. "Considering the sparseness of the population," the Sanitary Commissioner remarks, "that it is very scattered, and that the physical difficulties to be overcome by the vaccinators are very great in all districts, the results obtained in this department are satisfactory; and I should add that this success is largely due to the personal inspection of Civil Surgeons in their cold weather tours in their respective districts." Arm to arm vaccination was maintained in most of the districts throughout the year, but experiments were made in the cultivation of animal lymph at Pachmari, and having proved successful, a further and more extended trial was sanctioned, "with the view to place in the hands of every vaccinator in the province a sufficient quantity of animal lymph with which to begin the operations of the coming season." During the year the introduction of

the Vaccination Act into the municipalities of Nagpur, Narsinghpur, and Harda was sanctioned.

Madras. The vaccination work done in the Madras Presidency during 1891–92 was very satisfactory, and showed an improvement of 92,860 on the operations of the previous year, the total number having risen from 960,560 to 1,053,420. Of these 996,274 were primary cases with a percentage of success of 93·1, or 1·5 less than in 1890–91. Satisfactory, however, as the year's work was, there is still much room for improvement, as shown by the facts that only 210,652 of the 924,238 recorded births of the year were protected, and only 31·43 per 1,000 of the population. The increase in vaccinations was contributed by all the districts but three (Trichinopoly, Kurnool and Coimbatore), chief among them being Tinnevelly with an excess of 12,973, South Arcot 10,322, and Godavari 10,301. Out of the total of 56 municipal towns of the Presidency vaccination was compulsory in 48, in nine of which it was introduced during the year under notice. Animal lymph was employed to a more or less extent in all the districts and municipalities of the Presidency, and the number of operations performed with all kinds of the lymph was 674,148, showing the satisfactory increase of 341,563 on the previous year, and of these 90·4 per cent. were successful. It will thus be seen that more than two-thirds of the total vaccinations in the Presidency as against two-fifths in 1890–91 were performed with animal lymph, which, under the orders of the Government, will be the only medium employed in future. The best results were obtained with lymph direct from the calf (96·4 per cent.), next with preserved animal lymph (93·5 per cent.), and the lowest (89·3) with lanoline paste, which has since been discontinued.

Bombay. Very satisfactory progress was also made in vaccination work in the Bombay Presidency during 1891–92. The total number of persons vaccinated was 893·147, an increase of 63,079 on the operations of 1890–91. The increase was spread over all the districts and circles except Baroda, which showed a decrease of 876. The year's work included 830,873 primary vaccinations with a percentage of success of 94·88. The Sanitary Commissioner estimates that 76·58 per cent. of the children available for vaccination were protected. This calculation is based on the recorded births of the year, which are doubtless much below the actual number. Reckoning the births at 40 per 1,000 of population the percentage of success is reduced to 58·4. Of children between one and six years 171,075 were protected. Animal lymph was in use throughout the year in Bombay City and several other places. In many villages of the Poona district the people provided either a calf or the money necessary to provide one, and they much appreciated animal lymph as it does away with the necessity of lymph being taken from their children's arms. So long as fresh animal or human lymph is available the Sanitary Commissioner deprecates using it in a diluted state, no matter with what material it may be mixed as a vehicle. As regards the quality of the vaccination work, Dr. McRury states that it has improved vastly of late, "in fact, wherever animal lymph is used it could not be better, especially when "the system of multiple vesicles is carefully carried out, as in the larger towns of the "Southern and Central Registration districts and in the City of Bombay."

Berar. The vaccination returns of Berar showed the satisfactory increase of 14,694 operations as compared with the results of the previous year, the total having risen from 114,162 in 1890–91 to 128,856 in 1891–92. Vaccination in Berar, the Sanitary Commissioner observes, has come to that point when fluctuations in the number of primary operations will mainly depend upon prosperous seasons or the reverse, as they affect the fecundity of the people. Of the total vaccinations 98,403 were primary cases with a percentage of success of 95·2, a result which is all the more satisfactory as it was verified by inspection. Good work was done in the protection of the infantile population, for out of every 100 persons successfully vaccinated 82·7 per cent. were infants and 16 per cent. were children between one and six years of age. "The percentage "of success attained in the vaccination of the infant population" (82·3 per cent. of "births exclusive of deaths), the Resident observes in his Order on the Vaccination Returns of Berar, "is very high, and is a proof that the vaccinators have done their "work efficiently during the year, and that the people themselves have learnt to "recognise the benefits of vaccination. Moreover, the satisfaction of feeling that the "protection of this, the most susceptible portion of the population is fairly complete, "is enhanced by the knowledge that there cannot be many children remaining "unvaccinated in Berar." Animal lymph was used exclusively during the year. There was little difficulty in obtaining calves or young buffaloes, and no opposition in the way of religious prejudice was met with.

VI.—MEDICAL INSTITUTIONS.

Civil Hospitals and Dispensaries.

The following comparative statement shows the number of hospitals and dispensaries open in the several provinces of India during 1891 and the previous year, and the number of patients under treatment:—

Provinces, &c.		Number of Institutions.	Number of In-door Patients.	Number of Out-door Patients.	Total Number of Patients.
Bengal	1891	272	35,859	1,460,195	1,496,054
	1890	265	29,660	1,239,850	1,269,510
Calcutta and Howrah	1891	11	25,318	219,818	245,136
	1890	7	24,362	208,073	232,435
North-Western Provinces and Oudh	1891	299*	54,372	3,012,662	3,067,034
	1890	295*	52,566	2,837,803	2,890,369
Punjab	1891	228	49,700	2,541,753	2,591,453
	1890	216	48,147	2,532,349	2,580,496
Burma	1891	80	28,603	392,190	420,793
	1890	74	23,125	339,088	362,213
Central Provinces	1891	111	8,222	904,654	912,876
	1890	107	7,885	867,219	875,104
Assam	1891	74	4,455	322,391	326,846
	1890	69	3,704	261,723	265,427
Coorg	1891	4	858	22,327	23,185
	1890	4	567	21,554	22,121
Madras	1891	432	51,730	2,807,532	2,859,262
	1890	415†	47,739	2,663,418	2,711,157
Bombay	1891	254	43,936	1,798,294	1,842,230
	1890	248	38,512	1,685,072	1,723,584
Berar	1891	44	3,537	279,214	282,751
	1890	44	3,075	274,195	277,270
Total	1891	1,809	306,590	13,761,030	14,067,620
	1890	1,744	279,342	12,930,344	13,209,686

* Statistics were furnished for only 271 in 1890 and for 274 in 1891.
† Statistics were furnished for only 406.

Bengal. The returns of the charitable dispensaries in Bengal for 1891 show an increase both in the number of institutions and in the number of patients under treatment in them. The total number of dispensaries at work during 1891 in Bengal, exclusive of Calcutta, was 272, an increase of 7 on the number of the previous year. At these there were 1,496,054 patients under treatment, 35,859 being in-door, and 1,460,195 out-door patients, against 29,660 and 1,239,850 respectively in the previous year. This shows a total increase of 226,544, which was attributed partly to the opening of new dispensaries and partly to the increasing popularity of the institutions. Besides the 272 dispensaries eight more had been established, but were not at work during the year under notice. That there is still room for improvement is shown by the fact that only 21·5 per 1,000 of the population resorted to these institutions, while in the North-Western Provinces and Oudh and in the Punjab the proportions were 65 and 125 per 1,000 respectively. There was a satisfactory increase in the number both of women and children, though the number treated as in-door patients was still comparatively small. "The importance of the separate treatment of female patients has," Dr. Hilson reports, "been urged continually on the medical officers at my inspection, and measures

" have in many cases been taken to effect the object by the construction of suitable " accommodation." A still larger increase is expected from the adoption of cottage hospitals, a standard plan of which had been supplied to all civil surgeons. As already stated, the year 1891 was an unhealthy one in Bengal, and this was indicated not only by an increase of cases of malarial fever but also of cholera cases, the latter disease having prevailed epidemically in many districts during the year. More patients were also treated for all other diseases than in 1890, which, to a great extent was attributed to the fact that the dispensaries are on the whole gaining in popularity and are being more largely resorted to. Among the in-door patients there were 4,776 deaths, being in the ratio of 133·1 per 1,000 of total treated, against a death-rate of 128·5 per 1,000 in 1890. Great attention is paid in these institutions to surgery, and during the year 8,074 major operations were performed against 6,344 in 1890; of these 163 terminated fatally. Operations for cataract also increased from 1,686 to 2,159, a further instance of the appreciation of the relief afforded at these institutions. Several medical officers and their subordinates, the Inspector-General states, are now taking a greater interest in this important branch of their profession. The Lieutenant-Governor agreed with the Inspector General " in attaching much importance to this class of operations, as " the restoration of sight must necessarily gain for the successful operator the confidence " of the people in whose midst he is situated, and must consequently produce an " increase in the attendance at his dispensary."

The following statement shows the number of in-door and out-door patients treated in the several hospitals and dispensaries in Calcutta during the last two years:—

Name of Institutions.	1891.				1890.			
	In-door Patients.	Out-door Patients.	Total Number of Patients.	Died per 1,000 of In-door Patients treated.	In-door Patients.	Out-door Patients.	Total Number of Patients.	Died per 1,000 of In-door Patients treated.
Medical College Hospital	6,803	56,227	63,030	100·7	6,741	52,108	58,849	92·6
Presidency General Hospital	2,928†	—	2,928	43·3	3,105	—	3,105	36·0
Campbell Hospital	9,088‡	—	9,088	188·2	8,415	—	8,415	202·9
Police Hospital	2,468§	—	2,468	9·7	2,593	—	2,593	8·0
Mayo Native Hospital	1,884	28,700	30,584	156·5	1,814	27,976	29,790	124·5
Chandney Hospital	391	42,998	43,389	25·5	326	40,176	40,502	39·8
Park Street Dispensary	—	29,901	29,901	—	—	29,300	29,300	—
Chitpore Dispensary	—	22,262	22,262	—	—	19,777	19,777	—
Sukea's Street Dispensary	—	18,589	18,589	—	—	17,620	17,620	—
Bhawanipur Dispensary	—	10,884	10,884	—	—	10,694	10,694	—
Total Calcutta Hospitals and Dispensaries	23,562	209,561	233,123	121·5*	22,994	197,651	220,645	118·3*
Howrah General Hospital	1,756	10,257	12,013	211·2	1,368	10,422	11,790	220·2
Grand Total	25,318	219,818	245,136	127·8	24,362	208,073	232,435	124·1

* Reckoned on cases treated exclusive of those treated in the ophthalmic ward of the Medical College Hospital.
† Exclusive of 214 cases of no appreciable diseases.
‡ " 39 " "
§ " 20 " "

It will be seen that there was an increase in both classes of patients in all the hospitals but the Presidency General and Police Hospitals. The death-rate among the in-patients was 127·8 per 1,000, or $3\frac{1}{2}$ per 1,000 more than in 1890. Cholera patients rose from 528 to 761, and the fatal cases from 291 to 455, which accords with the increased prevalence of the disease among the general population. On the other hand, there was great decrease of small-pox cases from 321 to 21, all of which were treated in the Campbell Hospital. Dysentery and diarrhœa were also more prevalent than in the previous year, while the number of cases of malarial fever was somewhat less, being 4,235 against 4,366. There were 2,221 important surgical operations performed against 2,080 in 1890, and among them there were 107 deaths being in the ratio of 45 per 1,000, against a ratio of 39 in 1890.

Punjab.

Twelve new dispensaries were opened in the Punjab during 1891, bringing the total number of charitable institutions at work in that year up to 228. At these, 2,591,453 patients were under treatment, being an increase of 10,957 on the number of 1890. The increase was entirely due to the opening of the new dispensaries, as there was a considerable decrease on the number treated at the institutions which existed in 1890, when there was an abnormal increase owing chiefly to the great unhealthiness of the season. Calculated on the approximate population of the province, the number of patients yielded a percentage of 12·5. Of the diseases for which patients sought relief there were 3,988 cases of cholera, being an increase of 1,286 over 1890. Special medical aid was sent, it is stated, to the districts most affected. Cases of malarial fever declined from 580,273 to 421,677, which was due to the healthiness of the year, " but the returns show," the Inspector-General observes, " that the malarial influences prevailing in 1890

" left their mark in 1891 by an increased attendance of 11,050 cases of scurvy, of 4,063 " of debility, of 13,368 of diseases of the digestive system, of 5,474 cases of spleen, and " 18,369 of ulcer." Diseases of the eye showed an increase of 17,70 cases over 1890, the number treated in 1891 being 251,379. Among the in-patients there were 2,678 deaths during the year, being in the ratio of 53·9 per 1,000 of average strength against a death-rate of 54·5 in 1890. In surgical work there was an increase in minor operations from 171,126 to 185,120, and in those of a major kind from 11,105 to 13,736. Including those remaining from the previous year, the latter numbered 14,054. Among these there were 4,622 cases of cataract, of which 3,864 or 83·6 per cent. resulted in cure.

North-Western Provinces and Oudh.

During 1890 there were five new dispensaries opened in the North-Western Provinces and Oudh, and one was closed, the total at the end of the year being 299. Statistics, however, were furnished for only 274, at which the total number of patients treated was 3,067,634 against 2,890,369 in the previous year. Of the patients treated 625,456 were women and 750,832 were children, both showing a marked increase on the figures of the previous year, which were 513,254 and 630,765 respectively. The in-door patients numbered 54,372, as compared with 52,566 in 1890, and among them there were 3,357 deaths, giving a death-rate of 61·7 per 1,000 against 3,089 or 58·7 in the previous year. The increase in the mortality was attributed to the fresh cases being of a more serious nature than those admitted in the previous year. Of the diseases for which the patients were treated 530,961 were suffering from malarial fevers, a decrease of 17,976 on the number of 1890; of cases of cholera there were 8,502 against 7,423, and cases of diseases of the eye also increased from 218,468 to 241,942. The number of surgical cases rose from 141,950 to 154,963. These included 23,321 major operations, of which 17,745 resulted in cure and 330 were fatal. The new dispensaries accounted for 68,503 of the total increase of patients.

Burma.

The same 35 dispensaries were in operation in Lower Burma in 1891 as in the previous year, but the attendance increased from 262,801 to 284,349. Of the total patients, 140,172, or nearly half, were Burmese, which shows the growing popularity of these institutions. Indoor patients increased from 17,421 to 20,028, and of these 11,821 were cured and 1,248 or 60·0 per 1,000 died against 1,511 deaths or 86·8 per 1,000 in 1890. The year's work showed an increase in the number both of major and minor operations performed, the former having risen from 277 to 337, and the latter from 6,842 to 7,618.

During the year 45 dispensaries were in operation in Upper Burma, being an increase of six as compared with 1890, and the number of patients who attended them amounted to 136,444, or 37,002 more than in the previous year. Of the total 8,575 were in-patients, and 127,869 were out-patients. The Burmese resort to these institutions in considerable numbers, the proportion being 61·7 per cent. of the total. One hundred and five major and 2,162 minor operations were performed during the year.

Central Provinces.

There were 111 hospitals and dispensaries at work in the Central Provinces during 1891, or four more than in the previous year; and the total number of patients rose from 875,104 to 912,876. The increase extended to both in and out door patients, the former having risen from 7,885 to 8,222, and the latter from 867,219 to 904,654. Among the in-patients there were 977 deaths or 118·8 per 1,000, a ratio higher by 18 per 1,000 than that of 1890. The high mortality was greatly due to many of the patients being beggars and poverty-stricken wanderers from adjoining provinces who were taken to hospital by the police in a moribund condition. There were 22,472 surgical operations performed against 18,656 in 1890. Malarial fever cases were much fewer than in 1890, but in several groups of diseases there was a considerable increase. Cholera patients were greater by 219 per cent., and scurvy by 105; other diseases connected with bad or defective food were also more active and widespread.

Assam.

There were 74 dispensaries open in the province of Assam during 1891, an increase of five on the number of 1890. With this increase the total number of patients advanced from 265,427 to 326,846; that is, by nearly 17 per cent. In-patients increased from 3,704 to 4,455, and of these 2,433 were cured and 836 died, the latter being equal to 187·6 per 1,000 against a death-rate of 190·3 in the previous year. Out of the total number of patients malarial fever and diseases of the skin accounted for 138,091. Next in order came other diseases of the digestive system, dyspepsia, ulcers, dysentery, and spleen diseases. The number of major operations performed rose from

652 in 1890 to 732, and of minor operations from 6,321 to 7,728. The Chief Commissioner inspected every dispensary at district and sub-sectional headquarters in the plains, and was much struck with the improvement in their general appearance, equipment, and sanitary arrangements since he last inspected them in the cold season of 1886–7.

Madras.

The total number of civil hospitals and dispensaries open in the Madras Presidency during 1891 was 432, or 17 more than in the previous year. At these 2,859,262 patients were under treatment, 51,730 being in-door and 2,807,532 out-door patients, both showing a considerable increase as compared with the previous year. Of the in-patients, 30,633 were cured and 4,395 died, the latter representing a ratio of 85 per 1,000 of the total against 64 in 1890. In nearly all the districts epidemics of a severe character had to be contended with. Most of the important diseases showed an increase of cases, especially cholera, from which 22,007 persons sought relief against 8,991 in 1890, small-pox cases also rose from 424 to 856, and venereal cases from 54,289 to 63,295. The increase of patients was attributed partly to the unhealthiness of the year, but chiefly to the larger number of institutions in operation, and to their growing popularity among the natives. The appreciation of the people of medical treatment on European methods is further shown in the number of surgical operations performed, which aggregated 105,382 against 90,165 in 1890. Of these, 6,932 were major operations, being an increase of 627 on the previous year. It is noticed that during the three years 1888 to 1891 the number of midwives in the employment of District and Taluk Boards and Municipalities have increased from 157 to 208, and that during the same period the number of labour cases attended by them have nearly doubled, having risen from 6,086 to 11,703.

At the Madras Voluntary Venereal Hospital 442 patients were under treatment or 25 more than in 1890. A great number of them (219) were admitted for syphilis. It is reported that the patients, some of whom were children, only came to hospital when in a very advanced stage of disease. The returns, however, were looked upon as satisfactory, as the "keeping such bad cases off the town must have been "advantageous to both the military and civil population."

Bombay.

In the Bombay Presidency 254 civil hospitals and dispensaries were at work during 1891, an increase of six on the number of the previous year. The total number of patients treated was 1,842,230 (1,798,294 out-door and 43,936 in-door) against 1,723,584 (1,685,072 out-door and 38,512 in-door) in 1890, showing again an increase under each head. Of the in-patients, 26,380 were cured, 5,668 relieved, 5,229 discharged otherwise, and 3,013 died. The ratio of deaths on the total inmates was thus 68 per 1,000 against 67 in the previous year. Malarial fevers continued to head the list of diseases from which relief was sought, and the number of cases rose from 288,919 in 1890 to 324,536; cholera gave 2,205 cases, as compared with 691, and there was an increase of 271 cases of dysentery and 2,207 of diarrhœa. Patients suffering from venereal diseases increased from 33,459 to 36,037. The Surgeon-General with the Government of Bombay reports a steady increase in the admissions from these diseases in the civil hospitals of Bombay City. "The type of the disease," he says, "has also changed in its severity and virulence. I think it may fairly be inferred that "the increase in numbers and virulence of these diseases has resulted from the "abolition of the Contagious Diseases Act in the city of Bombay." Including the 129 surgical cases which remained under treatment from the previous year, the total major operations numbered 5,972, of which the largest number was in connexion with the eye. In the course of the year 4,929 of the cases were cured, 288 relieved, 79 discharged otherwise, and 173 ended fatally, leaving 134 still in hospital at the end of the year. The minor operations aggregated 87,682 against 81,872 in 1890.

Berar.

The same 44 dispensaries were open in Berar in 1891 as in the previous year. The number of in-patients was 3,537, and of out-patients 279,214, being an increase of 462 and 5,019 respectively compared with the figures of the previous year. The increased attendance was due in a great measure to the unhealthiness of the season as shown by the rise in the death-rate of the province from 35·4 per 1,000 of population to 40·6. Of the in-patients, 2,984 were cured and 208 died, which gives a death-rate of 58 per 1,000 of total treated against 46 in 1890. The increase in mortality was attributed to the hopeless condition in which most of those who died were received into hospital. Out of 148 deaths in the 36 charitable dispensaries, 26 died within 24 hours of date of admission. Of the diseases under

treatment malarial fevers again made up the largest proportion of patients. Diseases of the eye also appeared to be a source of general suffering. Cholera prevailed in an epidemic form, and the number of cases treated rose from 68 in 1890 to 2,293. There was also a considerable increase under dysentery and diarrhœa. There were 242 major and 9,360 minor surgical operations performed as against 142 and 9,971 respectively in 1890.

Lunatic Asylums.

Bengal.

At the five asylums in Bengal 1,234 lunatics, including 213 fresh admissions and re-admissions, were under treatment in 1891, being an increase of 26 on the number of the previous year. In the course of the year 149 patients were discharged as cured, and 42 otherwise, and 80 died. Compared with the figures of 1890 the admissions were fewer by eight, and the discharges and deaths together were greater by 84, with the result that at the end of the year there were 963 persons under detention, or 58 less than at the close of 1890. The criminal population of the asylums showed a decrease of 16, the number in confinement having fallen from 465 to 449, which was generally attributed to the effect of the rules laid down by the committee in 1888, which were coming into full operation, and by which lunatics of this class are now discharged after recovery. The health of the inmates of the asylums was again remarkably good. There was no serious epidemic of any disease except 28 cases of influenza at Patna and 39 cases at Berhampore. The whole of the latter were confined to women, while in the previous year only males suffered. The deaths in the asylums rose from 69 or 69·4 per 1,000 of average strength in 1890 to 80 or 80·2. Of these 1 was due to cholera, 17 to dysentery and diarrhœa, 10 to general debility and old age, 18 to tubercle of the lungs, 7 to pneumonia, and 4 to anæmia. Of the alleged causes of insanity 481 cases were under treatment during the year for physical causes, and 156 for moral causes, 90 of the latter arising from grief.

In the Bhowanipore Asylum, containing European and Eurasian patients only, the population was 50, or two more than in 1890. This number was reduced at the end of the year to 35, three persons having been discharged as cured, one despatched to Europe under the Merchant Shipping Act, one transferred to the care of friends, two made over to the military authorities, one despatched to Europe as still insane, and seven having died. The general health of the patients was good, there was no epidemic visitation of any kind. The question of closing this asylum altogether, and transferring the patients to the Dalanda block of buildings was under consideration, and had since been referred to a special committee.

North-Western Provinces and Oudh.

The daily average population of the four lunatic asylums (Agra, Bareilly, Benares, and Lucknow) in the North-Western Provinces and Oudh during 1891 was 1,007, or 7 less than in the previous year. The new admissions increased from 254 in 1890 to 277. In the course of the year 184 lunatics were discharged, of whom 119 were reported as cured, 87 died, and 1 escaped. Except for an outbreak of cholera at Benares, causing eight deaths, the year was exceptionally healthy, the death-rate standing at 86·4 per 1,000 against 90·8 in 1890. Of the total 87 deaths diseases of the respiratory organs accounted for 21, and anæmia and debility 19. The dairy which was started at Bareilly at the close of the previous year is reported to have proved an unqualified success. During the year arrangements were made at Bareilly to purchase grain when the market was low, and store it for future consumption. This resulted not only in a saving to Government but in an improvement in the health of the patients, owing to the possibility thus afforded of giving them a more liberal diet.

Punjab.

The total number of lunatics under treatment in the two asylums (Delhi and Lahore) in the Punjab during 1891 was 432, of whom 110 were fresh cases, and 5 were re-admissions. The discharges from all causes numbered 92, and of these 41 were cured, and 10 patients in improved health and 5 unimproved were made over to their friends. By the end of the year there remained under treatment 340 patients, an increase of 23 over the population at the same date in 1890. Of the total number of inmates of the asylums 74 were criminal lunatics, 23 of whom were admitted during the year. There was more sickness among the patients than in 1890, but the increase was almost entirely confined to the Lahore Asylum, where, however, the deaths fell from 27, or 115·3 per 1,000 of average strength, to 22, or 93·2. Of these the Inspector-General reports, 5 were admitted in a very bad state of health and died

within the year, and most of the others were chronic cases of disease occurring in debilitated subjects. At Delhi the deaths rose from 7 or 75·2 per 1,000 to 12 or 130·2. Here an epidemic of influenza in June accounted for 6 deaths, and pneumonia for 4 out of 10 cases. The Inspector-General again called attention to the defective construction and arrangements in the Lahore Asylum, but it appears that want of funds stands in the way of establishing a new asylum elsewhere.

Burma. During 1891 there were 335 lunatics in the Rangoon Asylum, including 84 fresh admissions, of whom only 45 were Burmese. At the close of the year the number of inmates had decreased to 254 by the discharge of 59 (35 as cured) and the death of 22. The general health of the patients was good. The admissions to hospital declined from 136 to 75 in the previous year, and the deaths from 40 or 154·1 per 1,000 of average strength to 22 or 80·5. There was no overcrowding on the civil side of the asylum, but, as in 1890, the asylum was overcrowded on the criminal side, and the number of criminal lunatics that had to be confined in the Rangoon jail for want of proper accommodation in the asylum increased steadily. The Inspector-General says when the new asylum is opened in Mandalay there will be ample accommodation in the province.

Central Provinces. The returns of the Nagpur and Jubbulpore asylums in the Central Provinces for 1891–92 show that the number of lunatics under treatment during the year was 317, or nine more than in 1890. Of these 58 were fresh admissions. There was no overcrowding at either institution, and at both the health of the patients was fairly good. Owing to the absence of influenza, which was prevalent in 1890, there was less sickness than in the preceding year. In the Nagpur asylum the admissions to hospital fell from 148 to 96, but in the Jubbulpore asylum, owing chiefly to an increase of fever cases, there was a slight rise in the admissions from 62 to 67. In the course of the year 33 patients were discharged, 25 as cured, and 23 died, so that the year closed with an asylum population of 261. Of the 23 deaths Nagpur recorded eight, which represented a mortality rate of 62·9 per 1,000 of average strength, identically the same as in 1890, while at Jubbulpore there were 15 deaths or 112·1 per 1,000 against 13 or 99·4. During the year various structural improvements were either carried out or in progress in both asylums, and at Nagpur, the improvement of the water-supply also received attention.

Assam. The total number of patients under treatment in the Tezpur lunatic asylum during 1891 was 167, being an increase of 23 on the previous year. Of these 42 were new admissions and 7 were re-admissions. Before the close of the year 36 had been discharged, 17 as cured, 18 died, and 2 escaped, leaving 111 still in the asylum at the end of the year. Both sickness and mortality were unusually high among the patients. The deaths were just double the number of the previous year, and the high rate of mortality (150 per 1,000 against 81) was attributed to the state of health on admission, the bad state of health of most of the lunatics at the commencement of the year (the year being unusually unhealthy) and to an epidemic of cholera in September, from which there were 13 cases and 5 deaths. Dysentery and pneumonia accounted for nine of the remaining deaths. The Sanitary Commissioner of the province reported well of the sanitary condition of the asylum, and recommended, as it was continuing to grow in size, that the well-water be filtered in regular filtering beds with a distribution tank attached, as is done in the Tezpur jail. He thought that the complete disuse of the tank water, which was blamed for the outbreak of cholera, would go far to prevent a recurrence of the disease. In view, however, of the more important requirements of the asylum, the Chief Commissioner thought that the proposal might stand over for the present, especially as the well from which the water-supply is obtained is a good one.

Madras. The total population of the three asylums in the Madras Presidency (Madras, Calicut, and Waltair) during 1891 was 810, of whom 211 were fresh cases and two were re-admissions. Of the total 61 were cured, 43 were discharged or transferred to the care of friends, and 114 died, leaving 592 patients at the close of the year. The general health of the asylums was again unsatisfactory, and the number of deaths (114) was the same as in the previous year. In the asylums of Calicut and Waltair, the mortality showed a decrease as compared with 1890, but in Madras the increase was so large, viz., from 187·0 per 1,000 of average strength to 230·9 as to more than counterbalance the favourable figures for the other two asylums, and to raise the average death-rate (185·7 per 1,000) to a higher figure than any recorded during the previous decade. In the Madras asylum the number of deaths rose from 81 in

1890 to 97, and of these 45 were due to dysentery and diarrhœa, and 8 to cholera. But although the mortality in this asylum was higher, and the year generally unhealthy, and the ratio of admissions to hospital abnormally high, the average daily sick (16) was much lower, an anomaly which the Superintendent attributed to the nature of the sickness, the cases being either rapidly fatal or cured and discharged within a short period. The causes of insanity were traced in 79·34 per cent. of the 213 fresh admissions, a marked improvement on previous years, and was due to increased attention bestowed on the subject. Dementia and mania were the most common forms of insanity under treatment, and contributed 417 and 228 cases respectively. The criminal lunatics numbered 171, of whom 34 were admitted during 1891. By the close of the year this number was reduced to 147 by the discharge or transfer of 15 and the death of 9.

Bombay.

In the six lunatic asylums of the Bombay Presidency there were 961 inmates during 1891, of whom 252 were new admissions and 19 were re-admissions. In the course of the year 182 patients were discharged, 90 as cured, and 70 died, leaving 709 in the asylums at the end of the year. The inmates were more healthy than in 1890, and the death-rate declined from 110 per 1,000 to 98 per 1,000 of average strength. Of the 70 deaths 18 were from dysentery, 12 from diarrhœa, 7 from debility, 6 from old age, and 4 from pneumonia. The cause of insanity was ascertained only in 488 cases, and of these 392 were attributed to physical and 96 to moral causes. The abuse of spirits and use of intoxicating drugs was alleged as the cause of more than a half (203 of the former). Fever was the cause given in 35 cases, epilepsy in 26, previous attack in 21, and destitution in 20; and of moral causes 67 cases were attributed to grief. Of the 961 lunatics, 132 belonged to the criminal class, or 3 less than in 1890, and of these 30 were new admissions. By the discharge of 16 as cured and 4 as otherwise, and the death of 6, there remained at the end of the year 106 inmates of the criminal class under confinement.

Medical Schools.

Bengal.

The number of medical schools open in Bengal during 1891–92 was 10, of which five were maintained by Government, and five were unaided. The Government Medical College, Calcutta, is affiliated to the University, and prepares candidates for its various medical degrees. The four other Government medical schools follow a lower course, through the medium of the vernacular, and grant licenses for practice to deserving students. Of the unaided schools, four are schools for teaching homœopathy, and one closely resembles the Campbell Medical at Sealdah, in its course of studies. The total number of pupils attending the various medical schools rose from 1,184 in 1890–91 to 1,290 in 1891–92, the increase being attributed to the opening during the latter year of the School of Homœopathy in Calcutta.

On the opening of the session in the Calcutta Medical College, 197 students resumed their studies, five rejoined, and 120 new students were admitted, making a total of 322, against 281 in the previous year. The strength of the College at the close of the session was reduced to 251, 71 of the students having left it after passing their examination or owing to other causes. As regards the examinations, 57 candidates (including 1 female) passed the Preliminary Scientific L.M.S. examination; 24 (including 1 female) passed the First L.M.S.; 20 passed the Second L.M.S. (17 (including 1 female) passed the Preliminary Scientific M.B.; 11 (including 1 female) passed the First M.B.; 4 passed the Second M.B.; and 2 passed in Honours in medicine. Twelve of the military students passed and left for regimental duties; 7 Native *dais* passed in midwifery from the Eden Hospital and received certificates of qualifications, and 13 pupil-nurses also passed as midwives.

The Campbell Medical School had 243 pupils on its rolls on the 31st March 1892. Out of 89 male and 9 female second-year students, 54 and 7 respectively passed the first license examination. For the second or final license examination there were 49 candidates, including 4 females, and of these, 42 male students were awarded diplomas, and 3 of the 4 females were declared to have passed. In the first-year class there were 69 male and 12 female students, of whom 58 and 7 respectively were promoted to the second-year class. In the compounder class there were 50 male and 2 females. As regards the entrance qualifications of the students, the Superintendent reported: "There has been a gradual increase in the number of students who possess the higher "entrance qualifications, and a decrease in the number of those possessing the middle "vernacular scholarship examination certificates. The largest number of female

" students possess the Campbell Medical School entrance examination certificates. " One of them, possessing the upper primary scholarship examination certificate, was a " Muhammadan. She is the first Muhammadan girl who has sought admission into " the School."

At the Dacca Medical School there were 161 pupils on the rolls, 4 being in the fourth-year class, 42 in the third-year class, 53 in the second-year class, and 62 in the first-year class. Thirty-six students passed the final examination, and obtained the diploma and the title of Civil Hospital Assistant; and 37 students of the second-year class passed the junior diploma examination and were promoted to the third-year class.

The Temple Medical School, Patna, had 127 students on its rolls, a falling off of 30 compared with the previous year, which was attributed to English being made a compulsory test for admission. Out of 36 students who competed for the second license examination 17 passed; and 27 pupils passed the first license examination out of 38 who attended it. The compounder class consisted of 16 pupils. This class is reported to be much appreciated by the public, and is frequently called upon to supply passed compounders to dispensaries in the neighbouring districts.

At the Cuttack Medical School there were altogether 66 pupils on the 31st March 1892. All the 25 third-year pupils passed the final examination and received diplomas, and of the 22 pupils of the second-year class, 21 were promoted to the third-year class. The Inspector-General of Hospitals, who visited the school during the year, testified to the progress it was making.

Good work is also being done in the diffusion of medical knowledge among the people of Bengal by private enterprise. There are five unaided medical schools, two at Dacca and three at Calcutta, four of which teach homœopathy.

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The number of pupils of the various classes which compose the Agra Medcal School who presented themselves for examination in 1891–92 was 216, or 3 less than in the previous year. Of these 51 were females, being an increase of 13 on the number of 1890–91. The extension to private pupils of the middle class qualificat on for entrance which took effect from the commencement of the year is reported to have caused little or no difficulty in obtaining pupils for the school as the number in the lowest class (IV.) of the male division was 42, as compared with 37 in 1890–91. The results of the examinations showed a general improvement in the attainment of the pupils. In Class I., or the final class, there were only 7 failures out of 60 candidates. The results of the work of the female pupils were also encouraging. Three out of 4 pupils in the first class obtained diplomas. The second and fourth classes did well. In the third class there was a considerable falling off; the students were considered in the previous year to be of inferior ability, and it was to be expected that their averages would compare unfavourably with those gained in 1890–91 by the present second class. Efforts were being made by the Dufferin Association to assist girls desirous of entering the Agra Medical School by giving five scholarships during their previous school training to girls who are willing to be educated up to the Middle English standard, and to engage to serve the Association for a fixed time after leaving the school; but the several schools interested had taken little advantage of the offer of these scholarships. The tuitional staff of the school has been strengthened by the appointment of a highly qualified officer to be the Chemical Examiner to the Provinces, who will also lecture on chemistry in the school.

njab.

The total number of students at the Lahore Medical College and School during 1891–92 was 322 against 297 in the previous year. Of these 144 (including 6 females) were in the College Class, and 178 (including 10 females) were in the Medical School. Of late years the College has developed very rapidly. In 1887–88 the number of students was 61, and in 1891–92 they had increased to 144. There has also been a satisfactory increase in free students. During the same period they have risen from 18 to 79. " These figures," the Inspector General of Civil Hospitals observes, " indicate that licentiates in medicine and surgery find yearly more openings for " following their professions outside Government service." The results of the examinations were on the whole satisfactory. For the L.M.S. diploma of the University 19 candidates presented themselves for examination, and of these 8 or 42 per cent. passed. This is an improvement on the results of the previous year, when at the same examination 38 per cent. of the candidates were successful. Ten out of the 19 candidates were examined for the first time and 6 were successful. All the remaining 9 candidates had failed at the previous examination. At the junior examination 26 (including 1 female) out of 39 candidates obtained qualifying marks, 2 having passed the first M.B. examination. In the Hospital Assistant Class of the

School 53 candidates were examined, and 39 (including 1 female) or 73·6 per cent. passed, against a percentage of 59 in 1890–91.

Madras. The total strength of the Madras Medical College during 1891–92 was 487, being an increase of 75 on the attendance of the previous year. Of these 41 were female students against 47 in 1890–91. In the Hospital Assistant Department, consisting of 254 pupils, 36 appeared for the final examination and 30 passed. The results of the several University examinations were highly satisfactory, the percentage of successful candidates being almost double that of the previous year. At the first L.M.S. examination there were 83 candidates, of whom 38 passed; and 15 out of 21 candidates passed the second L.M.S. examination. At the Preliminary Scientific examination 2 out of 10 passed. Of 6 candidates who appeared for the first M.B. and C.M. examination 4 passed, and all the 3 candidates who went up for the second M.B. and C.M. examination were successful. During the session 4 Dufferin Scholarships (2 Apothecary and 2 Hospital Assistant) were awarded.

The Board Medical School, Nellore, had 20 pupils (including 3 Mohammedans) on its rolls. Six stipendiaries went up for the final examination for the Hospital Assistant grade and all passed, one of them taking a place in the first class. At the Prince of Wales' Medical School, Tanjore, there were 27 pupils, 10 of whom were Native Christians, 5 Brahmans, and the remainder non-Brahman Hindus. Eleven of the pupils were being prepared for the Hospital Assistant grade.

Bombay. The attendance at the Grant Medical College, Bombay, rose from 203 in 1890 to 222 (including 26 females) in 1891. For the first University examination in medicine there were 67 candidates, of whom only 20 were successful; and for the second examination in medicine only 21 passed out of 76 candidates. The Principal of the College reported that in both of these examinations the greater proportion of the candidates had been rejected on previous occasions. Those who passed on the first attempt numbered 11 and 17 respectively. For the L.M.S. examination there were 49 candidates, and 22 were successful. Of these 9, all new candidates, were in the first class, 2 of them being women, who came out first and second in order of merit. In the midwife class 4 soldier's wives underwent the usual course of instruction in nursing and midwifery, and were found qualified for the diploma.

The Government Medical Schools at Poona, Ahmedabad and Hyderabad, were working satisfactorily. The number of students was 208, and of these 47 passed the third year examination.

VII.—SANITARY WORKS.

Civil.

Bengal.

Praiseworthy progress was made during 1891 in improving the sanitary condition of Calcutta. The extension of the water-supply was vigorously carried on; 581 stand-posts for filtered water were erected, and 36·36 miles of pipes laid, besides 3·7 miles of pipes and 85 hydrants for unfiltered water. At the close of the year the daily supply of water had reached 19 million gallons of filtered and 4¼ million gallons of unfiltered water, giving a daily average per head of population in the town of 35·93 gallons of filtered water, and in the suburbs of 15·11 gallons, besides an additional supply of 10 gallons per head of unfiltered water in the town for bathing and cleansing purposes. During the year, 1,439 premises were connected with the filtered supply, bringing the total up to 21,280, and the unfiltered connections amounted to 560, of which 81 were made in the course of the year. The drainage system of the town proper was practically completed some time ago, and the length of pipe sewers now open is 200 miles. Sewer construction was extended by 2·6 miles of pipe sewers and 6·34 miles of channels of surface drainage. The drainage of the suburban area was engaging the attention of the Commissioners, who proposed to take in hand the surface drainage scheme first. The Lieutenant-Governor of Bengal trusted that this important matter would not be forgotten, "since there can "be no doubt that the higher death-rate in the suburbs is very largely due to the "unsystematic and inadequate drainage of that part of the municipality." In the structural improvement of bustees considerable energy was displayed, and nearly two lakhs of rupees were expended during the year under this head. The required improvements were carried out in eight bustees in the town, while improvements were in progress in eleven others. "The Commissioners," it is stated, "are pleased to be "able to record a better out-turn of work under this head than in any previous year "since the improvement was first taken in hand in 1882–83.

The municipalities of the interior of Bengal spent Rs. 13,37,569, or 42·85 per cent. of their income (Rs. 31,20,971), on sanitary works. No projects of any magnitude were carried out during the year, but among the more important items may be mentioned the drainage works at Serampore, the acquisition of land for general improvements in the 24-Pergunnahs district, the construction of waterworks at Nasirabad, the extension of the waterworks at Decca, improvement of drainage at Puri, and the survey of Patna town for drainage purposes. The Sanitary Commissioner reports favourably of the interest shown in the majority of the municipalities in sanitary matters. "There is, undoubtedly," he says, "a growing desire on the part "of the majority of Municipal Commissioners to do all they can for the benefit of "the towns committed to their care, and to give effect to simple and inexpensive "advice, and, as far as their limited means will allow, also to the larger principles "of modern science." In improving sanitation the District and Local Boards spent Rs. 49,217 on the sinking of wells, excavating tanks, and improving drainage channels; while on similar measures a sum of Rs. 1,51,046 was expended by private individuals, the most important work being the improvement of the Sivaganga tanks in Deoghur, at the expense (Rs. 12,000) of His Highness the Maharajah of Darbhanga.

The Sanitary Board held five formal meetings during the year, at which a good deal of useful work was done. Various schemes were considered, among them being the water-supply for Howrah and other municipalities, and the drainage of Jalpaiguri and Puri. A survey of the towns of Jamalpur and Pabna was also completed, and the work of preparing drainage projects was undertaken. With a view to encourage municipalities to take up drainage surveys, the Local Government purchased some survey instruments for the purpose of lending to them for a fee. The result of the experiment proved satisfactory, and in consequence of the instruments having been in constant use, it was in contemplation to provide a larger supply.

Punjab.

Satisfactory progress was made in sanitary work in the Punjab during the year. The Peshawar and Abbottabad waterworks were completed and handed over to the respective municipalities. The Delhi waterworks were approaching completion. Water-supply schemes for Dalhousie, Kohat, and Murree were sanctioned and commenced. A similar scheme for Amritsar, to cost Rs. 12,25,000, had received sanction, and a project for increasing the water-supply of Simla had been prepared and forwarded to

the Government of India. Among the municipal drainage schemes, the works of Ludhiana were approaching completion. The drainage scheme for the town of Faridabad, in the Delhi district was in progress. Drainage works at Mozang, a suburb of Lahore, were begun, and the intramural drainage of Peshawar was in hand. The Gujranwala intramural drainage scheme was making good progress, and the Kohat drainage works were approaching completion. The main sewer at Simla was extended and arrangements were being made for carrying it still further down the stream. Water-supply and drainage schemes for several other places were under consideration at the close of the year. "Everywhere throughout the Punjab," the Army Sanitary Commission remark, "there is more or less evidence that steady progress is being made." The expenditure incurred by the municipalities under the different items of sanitary work in the course of the year was Rs. 12,04,769, equal to about 30 per cent. of their income. The sum realised from the sale of manure and town sweepings in the different municipalities continued to increase, and in 1891 amounted to Rs. 1,24,804 against Rs. 1,20,790 in 1890.

The Provincial Sanitary Board held six meetings during the year, and considered, amongst other business, the question of village sanitation, the condition of water-logged areas, the improvement of the registration of vital statistics, and also the draft of a Village Sanitation Act.

North-Western Provinces and Oudh.

Considerable progress was made in sanitary improvements in the North-Western Provinces and Oudh. The Sanitary Commissioner says: "A great advance in "sanitation in every direction is evinced in the record of the year, and the very "important and extensive works completed, in progress and initiated in those "provinces marks an era in the sanitation of Upper India." Among water-supply works the most important schemes undertaken or completed in 1891 were those at Allahabad, Benares, Cawnpore, Lucknow, and Naini Tal. The first of these was completed and opened by the Viceroy on the 26th March of the year under notice, and the inhabitants are said to appreciate its advantages. The water-supply schemes at Benares and Cawnpore were in progress, and the main lines of that for Lucknow were determined upon. At Naini Tal the scheme was taken in hand at an estimated cost of Rs. 40,000. Water-supply works were also constructed at Almora, in Kumaon district, and Haldwani, in Naini Tal district, at a cost of Rs. 50,000 and Rs. 57,000 respectively. Of the drainage schemes that for draining the important tract of country lying between the Burhganga and the east Kali Nadi, which had long suffered from water-logging, and which has now been practically reclaimed, was making rapid progress. The new drainage and sewerage project at Naini Tal was in hand. Much activity was also shown in the execution of minor sanitary works, on which the municipalities are reported to have spent a fair proportion of their income.

The Sanitary Board held three meetings during the year. The principal measures that received their attention were the preparation of programmes of the more pressing drainage works which in their opinion should be undertaken in the provinces during the next three years, drainage obstructions in the non-canal districts, the Village Sanitation Bill, and the provision of a maximum and minimum scale of conservancy establishments for municipalities.

Burma.

No new sanitary works of any importance were undertaken in Burma during 1891, but considerable sums were expended by many municipalities in minor works. The Shone drainage scheme was further extended in Rangoon, and was reported to be working satisfactorily. A scheme for the reclamation of low lands, and for the general improvement of the town, framed by the committee appointed for the purpose, was submitted to the Government of India, and since the close of the year had been approved. The Prome waterworks continued to give satisfaction, and a number of new hydrants were erected in private premises. The Public Works Department spent Rs. 1,28,484 in Lower Burma and Rs. 1,10,462 in Upper Burma on sanitary works. As regards village sanitation, the question is one, the Sanitary Commissioner states, "which demands more attention. There is too great a tendency to regard the matter "as hopeless, and therefore to abandon all attempts at improvement." Some advancement in this direction may however be expected, for he states further: "District "Medical Officers will in future be instructed to make brief notes on the sanitary "condition of the villages inspected by them during the year, and to incorporate them "with the district sanitary reports. Hitherto there has been no means of knowing "how many villages have been inspected by them, or of gauging accurately the "sanitary requirements of individual villages."

No very great progress was recorded by the Sanitary Board. Pending the appointment of a Sanitary Engineer, municipalities had been requested by the Board to furnish information of existing maps and a memorandum of the nature of drainage works, water-supply, and conservancy, which appeared to the local authorities necessary. The Board also submitted to the Local Government the rules and directions which they had framed for village sanitation, and their recommendations on the introduction of a Bill to provide for this object. Until funds are forthcoming, the Sanitary Board remark, and rules for sanitation are passed, no progress in the introduction of sanitary reforms can be expected.

Central Provinces.

In the Central Provinces the land lying around the reservoir of Jubbulpore waterworks was acquired in order to preserve the catchment area from pollution, and at Nagpur steps (since completed) were taken to achieve the same end. The Burhanpur waterworks were making progress, and at Raipur a commencement was made with similar works and have since been completed. With a view to the preparation of a drainage scheme, a survey was made of the towns of Nagpur and Jubbulpore, while a similar survey was in progress at Saugor. A surface drainage scheme for the town of Bilaspur was also sanctioned and taken in hand. In the head-quarter towns the expenditure on sanitation (excluding medical relief and vaccination) ranged from 38·82 per cent. of income at Bhandara to 10·18 at Sambalpur. During the year the Village Sanitation Act was extended to 40 villages, 33 of which are in the Nimar district, and in respect of a few of these, schemes of sanitary reform had been sanctioned, though the Chief Commissioner states: "In most cases all that can be done at present is to "provide new wells or improve existing ones."

The Sanitary Board held three meetings in the course of the year, and was chiefly occupied with the improvement of the sanitary condition of Nagpur and the scheme for village sanitary improvement which had been drawn up by the Chief Commissioner. His system embraces:—"(1) grouping the villages of a district into sanitary circles "of convenient size; (2) investigation by experts into the sanitary condition of each "circle with special reference to water-supply, conservancy and drainage, and "submission of proposals for improvement; (3) collation of such proposals with "information derived from the district executive authorities as to financial condition "of villages, &c.; (4) submission to and consideration by the Sanitary Board of such "proposals and other relevant information, and orders by the Board as to sanitary "works to be done, with distribution of available funds; (5) issue by the district "executive to the village authorities, panchayet or mukaddams of the Sanitary "Board's orders, and enforcement of the same."

Assam.

No sanitary works of much importance were executed in Assam during 1891. Out of their total income of Rs. 1,73,340 the municipalities spent 54·74 per cent. on sanitary and other improvements. In the course of his tour the Chief Commissioner visited the head-quarters of every district and sub-division in the plains districts, and was of opinion that on the whole progress was being made throughout the province in carrying out sanitary improvements. "The difficulties, however," he states, "in the "way of doing substantial work are very great owing to want of funds, and in order "to insure that money is spent to the best advantage and upon works of certain "benefit rather than on experiments, it has been decided that in places where "expensive water-supply schemes are impracticable, wells should be constructed "where the water-supply is deficient." As regards rural sanitation, the Chief Commissioner "found that Boards were doing as much as could reasonably be "expected from them with the means at their disposal, and having regard to the "extreme difficulty which must always be experienced in inducing the people living "in rural areas to pay any regard to sanitary requirements."

The Sanitary Board continued to do satisfactory work. During the year several suggestions and recommendations for improvements were proposed by them to the various authorities concerned.

Madras.

No great advance was made in sanitary improvements in Madras Municipality. The drainage of Black Town was making very little progress, and only one-fifth of the amount allotted for the purpose was utilised. The supply of water to the city from the Red Hills was insufficient in quantity and of inferior quality, and it was therefore found necessary to postpone further connexions with private premises. Hopes were entertained that the improvement of the water-supply of the town would before long be undertaken. The projects submitted to the Government had been investigated by an expert sent from England, whose report on the subject was awaited. To provide

funds for the scheme a special tax on tobacco was passed during the year, and is now in operation.

Excluding Madras Municipality, there were 55 other municipalities in the Presidency, and in these 37·6 per cent. of their total income (Rs. 26,52,995) was allotted to sanitation; but the actual expenditure during the first nine months of the year (1891–92) amounted to only 55·8 per cent. of the allotment. The Local Fund Boards also only expended 55 per cent. of their allotment for sanitation during the same period. The Government again called the attention of all municipal councils and presidents of boards to this small outlay. In only six of the municipalities did the expenditure on sanitation exceed 75 per cent. of the allotment. As in previous years, the works undertaken during 1891 were mostly of a minor nature, but in several towns drainage schemes and projects for improving water-supply were being carried out under the control of the Sanitary Engineer. "There has been greater "activity displayed," that officer remarks, "and greater anxiety evinced by councils "in regard to speedy improvement in water-supply or drainage than at any period "since the introduction of local self-government, and if only those schemes now under "preparation, in addition to those already sanctioned, are carried out within a "reasonable period, few of the provinces of India will be able to show such a stride "in sanitary progress." With a view to increase the efficiency of the Sanitary Engineer's department, the appointment of three Assistant Engineers was sanctioned, "each to be in charge of a circle, with the executive control of all works under "execution and all surveys in progress within that circle." As regards village sanitation, the Sanitary Commissioner reports that some progress in improvement has been made. "Many tanks and wells," he says, "have been deepened and cleaned out "and put in a much more satisfactory condition. So far as villages are concerned, "the evils lie mostly on the surface, and what is really wanted in villages is chiefly "to insure the maintenance of a pure water-supply, to keep the wells clean, and to "remove the rubbish to some distance from the village site."

Bombay.

The expenditure of the Health Department of the City of Bombay on sanitation in 1891–92 amounted to about 11½ lakhs. The Committee appointed by Government to consider the question of the change of drainage outlet from Worli to Colaba having decided on the retention of the former, new machinery for the Love Grove pumping station was sanctioned at a cost of 4 lakhs. The Tansa Waterworks, as a whole, were opened by the Viceroy on the 31st March 1892, from which date the regular supply of Tansa water to the city was commenced. The supply will be from 20 to 21 million gallons daily, instead of 17 million gallons as originally estimated. The area of the lake is stated to be nearly 6 miles, and a rainfall of 40 inches is sufficient to fill it, "so that even in the driest season no apprehension need be felt as to the sufficiency of "the water-supply." Several minor improvements were carried out in the city, such as the erection of latrines and urinals, and the repairing, altering, constructing, cleaning, and flushing of sewers and drains. In various localities 14,100 feet of new water mains were laid down, 2,391 feet of old pipes were renewed, and 479 house connexions with the mains were made, bringing the total of the latter at the end of the year up to 18,113.

In the other municipalities 7½ lakhs were devoted to conservancy. The construction of drains for the town of Hyderabad was approaching completion, and a similar scheme for Karachi was under contemplation. The new waterworks at Ahmedabad were formally opened by his Excellency the Governor on the 11th June 1891, and the greater portion of an experimental section of the drainage scheme was completed. Waterworks were in progress in Dhulia, and were commenced in Hubli, and in several other municipalities measures were under consideration for the improvement of the water-supply and drainage. From the notes of the Sanitary Commissioner's inspections it would appear that sanitation is very much neglected in many towns. "So far as my experience "goes," he says, "the cause of sanitation has not in any way prospered under local "self-government. On the contrary, several towns have of late appeared to me to be "growing more apathetic concerning this subject." The Government directed that Collectors and Presidents should be requested to urge on the local bodies the necessity of taking action on the lines indicated by the Sanitary Commissioner.

Since the close of the year under report a Sanitary Engineer has been appointed, and a Sanitary Board, consisting of this officer and the Sanitary Commissioner has been established.

Berar.

The municipalities of Berar spent 48·6 per cent. of their total income on sanitation during 1891–92, the expenditure for conservancy alone being 22·3 per cent. The surface drainage of several towns was extended, and considerable sums were expended

in improving the water-supply at Akola, Amraoti Town, Khamgaon, and Amraoti Camp. In districts (excluding municipalities), the total sum allotted to sanitary works amounted to Rs. 1,57,618, of which 24·9 per cent. was expended on conservancy, 18·7 on drainage, and 23·1 on water-supply. The principal work of the year was the completion of the Buldana water-supply at a total cost of Rs. 49,670, a scheme which provides for a population of 4,000 at the rate of 10 gallons per head. Works for supplying Akola with pure water was also commenced, and a sum of Rs. 14,850 spent on them during the year. This scheme will supply a population of 28,000 with 10 gallons of water per head.

In the province of Berar a Sanitary Board has been created for each district, and these district boards met twice at each headquarter station during 1891. "The "results of the Board's labours," the Sanitary Commissioner states, "show that but "little progress has been made in regard to village sanitation. The cause of this is "due to want of sufficient funds to carry out needful practical reforms, the want of a "proper supervising agency, and the absence of any law on village sanitation. . . . . "It is easy enough to demarcate limits, &c., and to require village sanitary boards to "instruct the people to observe these limits, but there is no means of enforcing "compliance, and as a rule no attention is paid to the Board's instructions." The Resident was not surprised at the Sanitary Commissioner's disappointment with the results of the year's work. "Rural sanitation," it is stated, "is perhaps the most difficult, and "certainly it is not the least important, problem of modern administration in India, "and the Resident is therefore glad to be able to agree with Colonel Mackenzie "(Commissioner of Berar) that, although local boards move slowly—and it is to be "remembered that they have only recently come into operation at Berar—still greater "care and attention is being given to sanitary matters all along the line." Regarding the need of a sanitation law, the Resident promised that if existing provisions were not sufficient, or if they could not be enforced, he would consider proposals for applying such a law to the province.

Military.

Bengal. The total expenditure on military sanitary works in the Bengal Command during 1891–92 amounted to Rs. 98,32,152, or Rs. 7,29,164 above the sum expended in the previous year. Details of the various works, however, have not yet been received.

Madras. Among the sanitary works carried out in the Madras Command in the course of the year the most important was the construction of a well in the military cholera camp at Ampana in Ganjam. A well was also sunk and new drains constructed at Vizianagram in Ganjam. At Calicut improvements were made in the lines at a cost of Rs. 13,688. And at other stations works of a minor character, having for their object the health and comfort of the troops, were either executed or in progress.

Bombay. The actual cost of military works in connexion with sanitation in the Bombay Command during 1891–92 was Rs. 44,175. The most important work carried out was the construction, at a cost of Rs. 12,932, of a new condenser at Aden, capable of producing 12,000 gallons of water. At other stations the work consisted mostly in improvements to barracks, buildings, and latrines.

India Office, W. T. Ronson.
14th September 1893.

ABSTRACTS

OF

SANITARY AND OTHER REPORTS

FOR

1891.

ABSTRACT OF REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1891.

(Surgeon-General W. R. Rice, C.S.I., M.D.)

European Troops.

The sickness of the European army of India was, according to the following table, less in 1891 than in the previous year, though the mortality was somewhat increased. The former fact was principally due to the great diminution of influenza and also of venereal disease, the latter to the increased prevalence of cholera. Sickness and mortality in 1891.

Abstract of Statistics of European Troops in India.

Year.	Strength.	Ratio per 1,000 of Strength.				
		Admissions.	Constantly Sick.	Deaths.	Invaliding.	Total Loss.
1870–79 - - - -	577,416	1,475	60	19·34	43	62
1881–90* - - - -	613,991	1,471	73	14·24	27	42
1890 - - - -	67,823	1,520	87	13·84	25	39
1891 - - - -	67,030	1,379	79	15·89	27	43

* Including troops in Afghanistan during 1881.

The chief causes of admission were venereal diseases, ague, injuries, diseases of the integuments, and simple continued fever. Among the diseases with increased admission rates were cholera (3·8 per 1,000 against 0·9), enteric fever (20·4 per 1,000 against 18·5), "other fevers" (2·6 per 1,000 against 0·7, mostly epidemic rose-rash), heat-stroke, circulatory diseases, and diarrhœa. On the other hand, the admission rate from influenza was reduced from 33·4 to 5·5, and the admission rates from pneumonia, other respiratory diseases, venereal diseases (400·7 per 1,000 against 503·5), malarial fevers, dysentery, hepatitis and splenic affections were also lessened. Venereal diseases caused 29 per cent. of the total sickness, and ague 25 per cent.

The chief causes of mortality were enteric fever, cholera, injuries, heat-stroke, and hepatic abscess. Among diseases with increased mortality were cholera (2·51 against 0·72), enteric fever (5·76 per 1,000 against 4·91), heat-stroke, and circulatory diseases. On the other hand, mortality from small-pox, pneumonia, dysentery, and abscess of the liver was lessened. Enteric fever caused 36 per cent. of the total deaths, as in the preceding year, and cholera 16 per cent.

The chief causes of invaliding were, in order, debility, syphilis and gonorrhœa, malarial fevers, tubercle of the lungs, mental affections, hepatitis, injuries, palpitation, and dysentery.

In the European army of Bengal, sickness, from the comparative absence of influenza and from lessening of venereal disease, was diminished, while mortality, from the greater prevalence of cholera, was increased. Cholera mortality was higher than it had been since 1881. Bengal Army.

European Army of Bengal.

Period.	Average Strength.	Ratio per 1,000 of Strength.						
		Admissions into Hospital.	Constantly Sick.	Deaths from			Invaliding.	Total Loss.
				Cholera.	Other Causes.	Total.		
1870-79 - -	363,421	1,522	61	4·18	16·82	21·00	41	62
1881-90* - -	380,078	1,552	74	1·48	13·00	14·48	26	40
1890 - - -	41,353	1,584	89	0·99	14·51	15·50	25	41
1891 - - -	40,994	1,394	80	2·78	14·08	16·86	25	42

* Excluding troops in Afghanistan during 1881.

The chief forms of sickness were venereal diseases, ague, injuries, and diseases of the integuments, Among the diseases with increased admission-rates were cholera (4·1 per 1,000 against 1·2), "other fevers" (mostly epidemic, rose rash, and dengue) heat-stroke, circulatory diseases, diarrhœa, and enteric fever. On the other hand, the admission-rates from influenza (5·8 per 1,000 against 31·4), pneumonia (2·8 per 1,000 against 5·9), venereal diseases (395·3 per 1,000 against 504·0), simple continued fever, "other respiratory diseases" and scurvy were lessened. Venereal diseases caused 28 per cent. of the total sickness, and ague 26 per cent.

The chief causes of mortality were enteric fever, cholera, (and at an interval) injuries, hepatic abscess and heat-stroke. Among the diseases with increased mortality were especially cholera, malarial fevers, heat-stroke, and enteric fever. On the other hand, mortality from pneumonia, alcoholism, dysentery, and hepatic abscess was lessened. Enteric fever caused 40 per cent. of the total deaths, as in the preceding year, and cholera over 16 per cent.

The chief causes of invaliding were, in order, debility, syphilis and gonorrhœa, malarial fevers, tubercle of the lungs, palpitation, injuries, hepatitis, and mental affections.

Madras Army.

Sickness in the European army of Madras, as may be seen from the following table, was less than in 1890, while mortality was somewhat greater, these results being due to a great decrease of influenza and also of venereal disease and an increase of cholera. The cholera mortality, though higher than that of 1890, was not so high as that of 1889:—

European Army of Madras.

Period.	Average Strength.	Ratio per 1,000 of Strength.						
		Admissions into Hospital.	Constantly Sick.	Deaths from			Invaliding.	Total Loss.
				Cholera.	Other Causes.	Total.		
1870–79	110,396	1,264	60	1·68	16·01	17·69	49	67
1881–90	117,592	1,257	73	1·05	11·94	12·99	28	41
1890	13,707	1,442	91	0·07	12·77	12·84	23	36
1891	13,324	1,304	82	1·58	12·91	14·49	31	46

The chief forms of sickness were venereal diseases, ague, injuries, diseases of the integuments, and simple continued fever, Among the diseases with increased admission-rates were cholera (2·2 per 1,000 against 0·1), "other fevers" (8·0 per 1,000 against 0·2, mostly epidemic rose rash), heat-stroke, and enteric fever. On the other hand, the admission-rate from influenza sank from 52·2 to 8·0, and that from venereal diseases from 491·2 to 402·1; while the admission-rates from malarial fevers, respiratory diseases, and hepatitis were also lessened. Venereal diseases caused 31 per cent. of the total sickness, and ague 19 per cent.

The chief causes of mortality were enteric fever, cholera, injuries, heat-stroke, hepatic abscess, and remittent fever. Among the diseases with increased mortality were cholera, pneumonia, abscess of the liver, circulatory diseases, heat-stroke, and alcoholism. On the other hand, mortality from enteric fever, malarial fevers, dysentery, and suicide was lessened. Enteric fever caused 21 per cent. of the total deaths, and cholera and injuries each 11 per cent.

The chief causes of invaliding were, in order, syphilis and gonorrhœa, debility, mental affections, hepatitis, dysentery, malarial fevers, tubercle of the lungs, and valve disease of the heart.

Bombay Army.

In the European army of Bombay, although the constantly sick-rate was diminished, there was a rise in the admission-rate and in the death-rate. While influenza and venereal disease sank, cholera, bowel complaints, and enteric fever increased. The cholera mortality was greater than it had been since 1885.

European Army of Bombay.

Period.	Average Strength.	Ratio per 1,000 of Strength.						
		Admissions into Hospital.	Constantly Sick.	Deaths from			Invaliding.	Total Loss.
				Cholera.	Other Causes.	Total.		
1870–79	103,587	1,533	57	1·53	13·74	15·27	43	58
1881–1890*	113,779	1,431	69	1·87	12·03	13·90	32	46
1890	12,763	1,396	77	0·55	9·01	9·56	29	38
1891	12,713	1,409	73	2·60	11·94	4·24	29	43

* Excluding troops in Afghanistan during 1881.

The chief forms of sickness were venereal diseases, ague, injuries, diseases of the integuments, and simple continued fever. Among the diseases with increased admission-ratios were cholera (4·2 per 1,000 against 0·5), enteric fever (15·7 per 1,000 against 10·2), bowel complaints, and ague. On the other hand, the admission-rates from influenza (2·1 per 1,000 against 19·4), venereal diseases (417·1 per 1,000 against 515·5), respiratory diseases, smallpox, and hepatitis were lessened. Venereal diseases caused 30 per cent. of the total sickness, and ague 26 per cent.

The chief causes of mortality were enteric fever (at an interval), cholera (at an interval), injuries, and heat-stroke. Among the diseases with increased mortality were cholera, enteric fever (5·58 per 1,000 against 1·88), and heat-stroke. On the other hand, mortality from suicide, remittent fever, alcoholism, and hepatitis was lessened. Enteric fever caused 39 per cent. of the total deaths, and cholera 18 per cent.

The chief causes of invaliding were, in order, debility, malarial fevers, syphilis and gonorrhœa, tubercle of the lungs, injuries, palpitation, diseases of the ear, mental affections, and valve disease of the heart.

The health statistics of the troops serving in Quetta were decidedly less favourable than in 1890, all the ratios in the following table being increased :—

Period.	Average Strength.	Ratio per 1,000 of Strength.				
		Admissions.	Constantly Sick.	Deaths from		
				Cholera.	Other Causes.	Total.
1884	1,441	2,056	82	27·07	41·63	68·70
1885	1,672	2,187	94	42·46	40·67	83·13
1886	1,752	2,442	73	20·57	19·41	19·98
1887	1,932	1,374	52	1·03	10·35	11·38
1888	2,223	1,140	59	—	13·50	13·50
1889	2,210	1,152	58	0·90	9·05	9·95
1890	2,019	1,099	58	—	9·41	9·41
1891*	2,162	1,621	62	6·48	7·40	13·88

* Excluding troops on the march.

There was great increased prevalence of cholera, ague, and simple continued fever, and greatly increased mortality from cholera.

The statistics of Gnathong in Sikkim for 1891 were better than those of 1890, which was the first year of its occupation.

Period.	Average Strength.	Ratio per 1,000 of Strength.				
		Admissions into Hospital.	Constantly Sick.	Deaths from		
				Cholera.	Other Causes.	Total.
1890	78	1,782	64	—	38·46	38·46
1891	104	1,192	58	—	9·62	9·62

Some influenza occurred, but there was a great decrease in ague. The only death of the year was by exhaustion from cold in the case of a man who had lost his way.

The vital statistics of the troops serving in Burma were, as shown in the following table, better in 1891 than in 1890, with the exception of mortality from cholera :—

European Troops in Burma.

Period.	Average Strength.	Ratio per 1,000 of Strength.				
		Admissions into Hospital.	Constantly Sick.	Deaths from		
				Cholera.	Other Causes.	Total.
1888*	4,061	1,681	87	9·60	22·90	32·50
1889	4,825	1,903	92	2·49	26·73	29·22
1890	4,712	1,743	102	—	20·80	20·80
1891	4,623	1,589	92	2·38	17·74	20·12

* Excluding men on active service for the first three months of the year.

Burma was distinguished by the prevalence of influenza, malarial fevers, simple continued fever, dysentery, and hepatitis.

Some of the more important causes of admission into hospital in the three Presidencies are shown in the following table in the direct order of their ratios :—

Admitted per 1,000 *of strength.*

Bengal.	1891.	1890.	1881 to 1890.	Madras.	1891.	1890.	1881 to 1890.	Bombay.	1891.	1890.	1881 to 1890.
Venereal diseases	395	504	366	Venereal diseases	402	491	367	Venereal diseases	417	515	330
Ague	369	400	459	Ague	249	277	195	Ague	360	288	409
Simple continued fever	40	67	68	Simple continued fever	70	55	52	Simple continued fever	60	57	66
Respiratory diseases	37	45	74*	Dysentery	48	44	52	Diarrhœa	39	31	43
Rheumatism and neuralgia.	36	37	44	Rheumatism and neuralgia.	37	46	39	Respiratory diseases	30	33	64*
Diarrhœa	35	33	46	Respiratory diseases	28	30	40*	Rheumatism and neuralgia.	28	32	37
Enteric fever	25	24	15	Hepatitis	26	28	35	Dysentery	25	20	22
Dysentery	23	27	26	Diarrhœa	13	17	40	Hepatitis	17	18	20
Hepatitis	18	20	24	Enteric fever	11	9	9	Enteric fever	16	10	10
Remittent fever	7	9	10	Remittent fever	8	10	8	Phthisis pulmonalis	5	5	6
Influenza	6	31	3	Influenza	8	52	6	Remittent fever	5	5	10
Phthisis pulmonalis	4	4	6	Phthisis pulmonalis	3	4	5	Influenza	2	19	2
Spleen diseases	3	3	4	Spleen diseases	1	2	1	Spleen diseases	2	2	3
Total from all causes	1,394	1,584	1,552	Total from all causes	1,304	1,442	1,257	Total from all causes	1,409	1,396	1,431

* Including tonsillitis and sore throat.

In all three Presidencies venereal diseases head the list, but show ratios much lower than in the previous year, though still considerably higher than the ratios of the decennium 1881–90. Ague comes next, and here also each ratio is lower than the corresponding one of the preceding year. Those of Bengal and Bombay are lower than the decennial ratios; that of Madras higher, on account of the addition of Burma to the command from 1886. Bengal had the highest admission ratios from ague, respiratory diseases, enteric fever, and splenic affections; Madras the highest from simple continued fever, rheumatism, influenza, dysentery, hepatitis and remittent fever; Bombay the highest from venereal diseases, diarrhœa, phthisis, and all causes.

Some of the more important causes of death in the three Presidencies are shown in the following table :—

Deaths from the Chief Diseases and from all Causes in the three Presidencies per 1,000 *of strength.*

Deaths from	Bengal.			Deaths from	Madras.			Deaths from	Bombay.		
	1891.	1890.	1881–90.		1891.	1890.	1881–90.		1891.	1890.	1881–90.
Enteric fever	6·64	6·26	4·33	Enteric fever	3·08	3·65	2·73	Enteric fever	5·58	1·88	3·07
Cholera	2·78	·99	1·48	Cholera	1·58	·07	1·05	Cholera	2·60	·55	1·87
Hepatic: Abscess	·98	·8	1·25	Hepatic: Abscess	1·35	·95	1·93	Hepatic: Abscess	·55	·71	·97
Hepatic: Congestion and inflammation	·05	0·2		Hepatic: Congestion and inflammation	·23	·22		Hepatic: Congestion and inflammation	·16	·24	
Pneumonia	·51	1·23	·89*	Remittent fever	·83	1·02	·69	Phthisis pulmonalis	·63	·86	·68
Other respiratory diseases	·10	·24		Pneumonia	·68	·29	·42*	Pneumonia	·47	·47	·89*
Phthisis pulmonalis	·61	·58	·82	Other respiratory diseases	·08	·29		Other respiratory diseases	·08	·39	
Dysentery	·44	·73	·60	Dysentery	·45	·95	·98	Dysentery	·47	·55	·93
Remittent fever	·39	·34	·45	Phthisis pulmonalis	·30	·58	·59	Diarrhœa	·16	·08	·11
Diarrhœa	·07	·05	·07	Diarrhœa	—	—	·13	Remittent fever	·08	·31	·60
Total from all causes	16·86	15·50	14·48	Total from all causes	14·49	12·84	12·99	Total from all causes	14·24	9·56	13·90

* Including tonsillitis and sorethroat.

In all three Presidencies enteric fever heads the list, and is followed by cholera and then by abscess of the liver. The ratios of enteric fever and cholera in 1891 were above the decennial rates, the ratio of hepatitis below the decennial rate, in all three Presidencies.

Bengal had the highest death-rates from enteric fever, respiratory diseases other than pneumonia, and cholera; Madras the highest from pneumonia, hepatic abscess, hepatitis, and remittent fever; Bombay the highest from dysentery, phthisis, and diarrhœa. Mortality from enteric fever decreased in Madras, slightly increased in Bengal, but greatly increased in Bombay. The percentage respectively of enteric fever, hepatitis, dysentery, and pneumonia in the total deaths of each Presidency was:—

1891.

	Bengal.	Madras.	Bombay.
Enteric fever	39·4	21·2	39·2
Hepatitis	6·1	10·9	5·0
Dysentery	2·6	3·1	3·3
Pneumonia	3·0	4·7	3·3

Bengal was highest in enteric fever; Madras in hepatitis and pneumomia; and Bombay in dysentery.

This year by order of the Government of India the old geographical groups have been discarded in favour of a new set arranged by a committee. These new groups are to be adhered to by both the Medical and the Meteorological Departments, and also closely correspond with the divisions adopted for revenue and agricultural returns. They are to be used equally for the statistics of European troops, of native troops, and of prisoners, and are numbered and named as follows:—

Groups.

I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.
Burma Coast and Bay Islands.	Burma Inland.	Assam.	Bengal and Orissa.	Gangetic Plain and Chutia-Nagpur.	Upper Sub-Himalayan.	Indus Valley and N.W. Rajputana.	S.E. Rajputana, C. India, and Gujarat.	Deccan.	Western Coast.	Southern India.	Hill Stations.

But, as there are no European troops in Assam, and as it is necessary to separate Hill Convalescent Depôts from Hill Stations, the columns in the case of European troops will stand as follows:—

Groups.

I.	II.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII*a*.	XII*b*.
Burma Coast and Bay Islands.	Burma Inland.	Bengal and Orissa.	Gangetic Plain and Chutia-Nagpur.	Upper Sub-Himalayan.	Indus Valley and N.W. Rajputana.	S.E. Rajputana, C. India, and Gujarat.	Deccan.	Western Coast.	Southern India.	Hill Stations.	Hill Convalescent Depôts.

Of the 12 annual ratios of constantly sick, 8 were higher than the ratio of India, and 4 lower, the highest ratio being that of Inland Burma, and the lowest that of the Hill Stations. The highest admission ratio was that of Bengal and Orissa, and the lowest that of the Hill Stations. Burma Coast had the highest admission-ratios from remittent fever, simple continued fever, dysentery, hepatitis, and urinary diseases; Burma Inland the highest from influenza and ague; Bengal and Orissa the highest from circulatory diseases, respiratory diseases other than pneumonia, diarrhœa, rheumatism, and entozoa; the Gangetic Plain the highest from cholera, enteric fever, heatstroke, and eye diseases; Central India the highest from tubercle of the lungs and scurvy; the Western Coast the highest from nervous diseases, abscess of the liver, venereal diseases, diseases of the integuments, and injuries; Southern India the highest from "other fevers" and pneumonia; the Hill Stations the highest from alcoholism; and the Hill Convalescent Depôts the highest from tonsillitis and spleen diseases.

Of the 12 annual ratios of mortality 6 were higher and 6 lower than the ratio of India; that of the Gangetic Plain being the highest, and that of the Western Coast the lowest. Burma Coast had the highest death-rates from remittent fever, alcoholism, valvular disease and aneurysm, and urinary diseases; Burma Inland the highest from ague and heatstroke; Bengal and Orissa the highest from nervous diseases, respiratory diseases other than pneumonia, dysentery, and injuries; the Gangetic Plain the highest from cholera; the Western Coast the highest from tubercle of the lungs; Southern India the highest from pneumonia; and the Hill Convalescent Depôts the highest from enteric fever, hepatic abscess, and hepatitis.

The following shows how the composition of 100 deaths varied in the groups:—

Percentage in Total Deaths.

Deaths from	1. Burma Coast and Bay Islands.	2. Burma Inland.	3. Bengal and Orissa.	4. Gangetic Plain and Chutia Nagpur.	5. Upper Sub-Himalayan.	6. Indus Valley and North West Rajputana.	7. South-East Rajputana, Central India, and Gujarat.	8. Deccan.	9. Western Coast.	10. Southern India.	11. Hill Stations.	12. Hill Convalescent Depôts.
Cholera	—	4·1	2·7	39·6	6·7	25·9	21·7	14·4	—	2·0	14·2	—
Enteric fever	21·7	24·5	29·7	26·8	46·6	35·2	38·7	37·8	—	29·4	50·0	51·1
Remittent fever	13·0	8·2	2·7	·6	5·0	—	—	—	—	3·9	—	4·4
Dysentery	4·3	6·1	8·1	3·7	1·7	—	3·8	4·5	—	2·0	—	2·2
Diarrhœa	—	—	—	·6	·4	—	·9	1·8	—	—	—	—
Abscess of liver	13·0	6·1	10·8	3·0	5·5	1·9	3·8	8·1	28·6	11·8	6·6	13·3
Pneumonia	4·3	2·0	2·7	1·8	3·8	—	2·8	2·7	—	9·8	4·7	4·4
Tubercle of the lungs	4·3	—	—	3·0	3·4	1·9	1·9	2·7	14·3	—	2·8	—
Total from all Causes	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

It shows that, viewed in proportion to the total deaths from all causes, remittent fever formed a more important item in Burma Coast than in other groups; dysentery in Bengal and Orissa; cholera in the Gangetic Plain; tubercle of the lungs and abscess of the liver on the Western Coast; pneumonia in Southern India; and enteric fever in the Hill Convalescent Depôts and Hill Stations.

In 1891 influenza came down from 2,263 cases, 33 per 1,000 of strength, to 372 cases, 5·5 per 1,000 of strength; in 1891 the number of stations attacked was much reduced, the disease being practically confined, with the exception of Thayetmyo and Aden, to the Himalayan and Upper Sub-Himalayan Stations; and in 1891 the disease reached its monthly maximum in July instead of in April. Principal diseases: Influenza.

The amount of cholera was much greater than in the preceding year. There were 252 admissions against 58, and 168 deaths against 49. The permillage of admissions to strength was 3·8, and of deaths 2·51, and the percentage of deaths to cases 66·67. The corresponding figures of 1890 were 0·9, 0·72, and 84·48; and of the decennium 1881–90, 2·1, 1·46, and 68·11. The greatest number of cases occurred in May and September; and there was more cholera in the second half of the year than in the first. Cholera.

The ratios of morbidity, mortality, and fatality in the Bengal army were respectively 4·1, 2·78, and 67·06, against 1·2, 0·99, and 82·00 in 1890, and against 2·2, 1·48, and 67·59 in the decennium 1881–90. Of the total 170 cases 32 per cent. occurred in May, and 20 per cent. in September. The station most severely affected was Lucknow, where there were 51 cases with 29 deaths in May.

In the Madras army there were 29 cases of cholera, a ratio of 2·2, against 1, and 21 deaths, a ratio of 1·58, against 0·07. The fatality was 72·41 against 100·00 in 1890, and 70·69 in the decennium 1881–90. There were 13 cases in May, and 12 in October, the former among troops marching and the latter at South Secunderabad.

The morbidity ratio of the Bombay army rose from 0·5 to 4·2, the mortality ratio from 0·55 to 2·60; while the fatality ratio was 62·26 against 100·00 in 1890, and 68·05 in the decennium 1881–90. Out of the 53 cases 85 per cent. occurred in August and September. Nasirabad had 29 cases in August-September.

Smallpox was less prevalent. There were 14 admissions (0·2 per 1,000) and 1 death (0·01 per 1,000) against 36 (0·5 per 1,000) and 4 (0·06 per 1,000) in 1890. All three Presidencies participated in the reduction. The greatest number of cases at any one station was 4 at Agra, and the only death occurred at Bareilly. Small-pox.

Ague gave rise to about 25 per cent. of the admissions from all causes in the army of India. The admission-rate (343·5) was nearly 11 per 1,000 lower than in the preceding year. The admission-rate rose only in the Bombay army, and the death-rate only in the Bengal army. Fevers.

The most malarious groups were Burma Inland and Bengal-Orissa, and the least malarious Southern India and Burma Coast. September and October were the most malarious months for India, though not for the Madras Presidency.

The admission and death ratios from remittent fever fell respectively from 8·1 and 0·47 to 6·8 and 0·42. All the Presidencies participated in the decrease of admission; and only in Bengal was there an increase of mortality. Amongst groups the highest ratios were those of Burma Coast and Burma Inland, and the lowest those of Western Coast and Southern India.

For India the admission ratio from simple continued fever was reduced from 62·5 to 49·8, while, as in 1890, there was only one death. No deaths were returned under this head from the Bengal and Madras armies. Both Madras and Bombay had increased admission-rates. Burma Coast and Western Coast had the highest ratios, and Bengal-Orissa the lowest ratio. Medical officers frequently note that many of the cases returned as simple continued fever are in all probability really mild cases of enteric fever with symptoms too indefinite to justify a diagnosis of the more serious malady. Some medical officers draw the line between simple continued fever and enteric fever differently from others.

On page 476 of the *Lancet* of 1892 it is noted that "there are rare cases of enteric fever in which the intestinal glands are not affected." Again, in a Norwegian medical magazine (quoted in Virchow and Hirsch's *Jahresberich*), Dr. Krefling,* in support of the importance of bacteriology in the diagnosis of enteric fever, cites a case and insists that in cases of undoubted enteric fever the anatomical changes may be very trifling and may consist only of a scarcely noticeable swelling of Peyer's patches and some mesenteric glands. No further report on the bacteriological examination of tissues of Indian enteric cases has been received from Professor Fischer of Kiel, and no account Enteric fever.

* Spelt Krœfting in another reference.

of bacteriological work by officers in India has come to hand. A certain number of French bacteriologists, followed by some English, have insisted upon the ultimate identity of the enteric bacillus with the *bacillus coli communis*, the two being regarded simply as varieties. This is the bacteriological expression of the opinion occasionally heard in India that the enteric fever of India is a "kind of fermentative change set up "in the intestines by the influence of climate, &c." But the leading bacteriologists of Europe hold to the opinion that the bacillus of enteric and the *bacillus coli communis* are specifically distinct, and that the active cause of enteric fever always enters the body from without. From a sanitary point of view the latter is the safer opinion to act upon in the meantime. Four points have lately been specially insisted upon as distinguishing the two bacilli,—the difference in the flagella, the difference in sugar-fermentative power, the difference in power of congulating milk, and the difference in power of evolving gas in plain bouillon. But the whole investigation is a very difficult one, and in it no amount of enthusiasm will compensate for lack of training and apparatus. What is wanted in India is not more private work by medical officers, however enthusiastic, but work by trained experts in properly-equipped laboratories to supplement the clinical work of medical officers. Meanwhile it should be borne in mind that the finding of the enteric bacillus in a few cases of Indian fever, though it proves that the same enteric fever occurs in India as in Europe, does not prove that all Indian continued or remittent fevers are of the same kind. Indeed, the anomalous clinical and pathological character of many Indian cases of fever raises the suspicion that much remains still to be done in the way of differentiation. As happened in the case of typhus and typhoid in Europe, a time may come when men will wonder how certain Indian fevers ever came to be confused one with another and lumped together. Though medical officers are obliged to return all cases of fever under one or other of the heads laid down in the official nomenclature, they are not bound to classify them exactly in the same way in their own minds. If, taught by the past, medical men in India go on patiently recording all the indications of which they catch sight, the men at length will arise who shall gather up all the clues and read aloud the secret.

There are two points mentioned by medical officers which deserve special attention. One is the danger which soldiers incur when marching from one well-kept cantonment to another, and perhaps especially from the plains to the hills,—they have to pass through a belt of insanitation, to wade, as it were, from cleanliness through filth to cleanliness, many contracting enteric fever on the way. The other is the danger, as far as the spread of the disease goes, of many mild cases of fever, suspected or unsuspected, being really cases of enteric fever; nearly all medical officers refer to such cases. Recent researches seem to show that the enteric bacillus may remain alive for considerable periods in fæces and earth. So that in all cases where there can be any suspicion of enteric the dejecta should be disinfected. Three per cent. of a freshly slaked 22 per cent. milk of lime well mixed in is said to be an effective disinfectant.

There was an increase of both morbidity and mortality from enteric fever in 1891. As compared with the corresponding ratios of 1890, the admission (20·4) and death (5·73) ratios for enteric fever increased respectively by 1·9 and 0·82 per 1,000 of strength. There were 1,366 admissions and 384 deaths in 1891 against 1,253 and 333 in 1890.

The following table shows the admission and death-rates from enteric and from intermittent, remittent, and simple continued fevers in the three Presidencies for a series of years :—

Period.	Bengal.						Madras.						Bombay.					
	Admissions per 1,000.			Deaths per 1,000.			Admissions per 1,000.			Deaths per 1,000.			Admissions per 1,000.			Deaths per 1,000.		
	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.
1870-79* - -	5·3	607·3	612·6	2·28	1·74	4·02	3·9	266·5	270·4	1·42	0·62	2·04	3·1	659·9	663·0	1·75	1·14	2·89
1881-90† - -	15·2	536·0	551·2	4·33	0·59	4·92	9·0	254·6	263·6	2·73	0·91	3·64	10·0	486·6	496·6	3·07	0·85	3·92
1890 - -	24·1	475·5	499·6	6·26	0·39	6·65	9·3	341·8	351·1	3·65	1·67	5·32	10·2	349·0	359·2	1·88	0·39	2·27
1891 - - -	24·9	416·3	441·2	6·64	0·56	7·20	10·8	327·3	338·1	3·08	1·21	4·29	15·7	424·8	440·5	5·58	0·16	5·74

* Including troops on active service and on the march.

† Excluding Bengal and Bombay troops in Afghanistan during 1881.

With regard to both admissions and deaths from enteric fever, Bengal stood highest The admission ratios of all three Presidencies, and the death ratios of Bengal and Bombay, were higher than the corresponding ratios of 1890. All the enteric ratios both of admission and death were above the decennial ratios of 1881–90. The increase of non-enteric fevers in the Madras Army since 1885 is due to the new territory of Upper Burma having been placed under that Command. On the whole, the table shows the gradual increase in the diagnosis of enteric fever; but also, by the rising mortality, a real increase of enteric fever. The following table is to facilitate the study of the same mortalities :—

	During 1870–79.			During 1881–90.			During 1890.			During 1891.		
	Enteric Fever.	Other Fevers.*	Total of both.	Enteric Fever.	Other Fevers.*	Total of both.	Enteric Fever.	Other Fevers.*	Total of both.	Enteric Fever.	Other Fevers.*	Total of both.
Army of India†	2·03	1·42	3·45	3·79	0·70	4·49	4·91	0·64	5·55	5·73	0·61	6·34
„ Bengal‡	2·28	1·74	4·02	4·33	0·59	4·92	6·26	0·39	6·65	6·64	0·56	7·20
„ Madras†	1·42	0·62	2·04	2·73	0·91	3·64	3·65	1·67	5·32	3·08	1·21	4·29
„ Bombay‡	1·75	1·14	2·89	3·07	0·85	3·92	1·88	0·39	2·27	5·58	0·16	5·74

* Intermittent, remittent, and simple continued fevers.
† Excluding troops on active service in Burma during 1885 to 1887.
‡ Excluding troops in Afghanistan during 1881.

It shows that in the last 10 years, and especially of recent years, there has been an increase in total fever mortality, usually ascribed to the greater youthfulness and recent arrival of the soldiers of to-day; and an increase of mortality from enteric fever accompanied by a decrease in mortality from the other fevers, which is probably partly due to increased susceptibility on the part of the army, from youth and recent arrival, and partly due to the greater frequency with which the diagnosis of enteric fever is now made.

In the following table the geographical groups are arranged in the direct order of their admission rates from enteric fever :—

Groups and their Numbers.	Average strength.	Number of Cases.	Admissions per 1,000.	Number of Deaths.	Deaths per 1,000.	Percentage of Deaths to Cases.
V. Gangetic Plain and Chutia Nagpur	6,714	210	31·3	44	6·55	17·53
VI. Upper Sub Himalayan	12,711	395	31·1	111	8·73	22·75
VIII. S.-E. Rajputana, C. India, and Gujarat	5,868	152	25·9	41	6·99	24·12
XII*a*. Hill Stations	9,082	193	21·3	53	5·84	26·90
XI. Southern India	3,579	70	19·6	15	4·19	20·55
XII*b*. Hill Convalescent Depôts	2,577	42	16·3	23	8·93	53·49
IX. Deccan	9,490	126	13·3	42	4·43	32·56
VII. Indus Valley and N.-W. Rajputana	4,627	56	12·1	19	4·11	29·23
IV. Bengal and Orissa	2,207	24	10·9	11	4·98	45·83
II. Burma Inland	2,711	23	8·5	12	4·43	48·00
I. Burma Coast and Bay Islands	1,624	6	3·7	5	3·08	83·33
X. Western Coast	1,304	3	2·3	—	—	—
Army of Bengal	40,994	1,022	24·9	272	6·64	22·99
Army of Madras	13,324	144	10·8	41	3·08	27·33
Army of Bombay	12,713	200	15·7	71	5·58	34·13
Army of India	67,030	1,366	20·4	384	5·73	24·92

Four of the groups had ratios higher than the ratio for India. The admission rate varied from 31 per 1,000 in the Gangetic Plain and the Upper Sub-Himalayan group to 2 per 1,000 on the Western Coast and 4 per 1,000 on the Burma Coast. Five of

the groups had mortalities higher than that of India. Mortality varied from 9 per 1,000 in the Hill Convalescent Depôts and Upper Sub-Himalayan group to 3 per 1,000 on the Burma Coast. In the first four groups the fatality varied inversely as the morbidity. The highest fatalities were 83 on the Burma Coast and 53 in the Hill Depôts, and the lowest 18 in the Gangetic Plain and 33 in the Upper Sub-Himalayan Group.

The following shows those garrisons of India which had an average strength of over 1,000, arranged in the direct order of their admission ratios from enteric fever:—

ENTERIC FEVER in 1891.

Stations over 1,000 *strong.*

Stations.	Average Annual Strength.	Admission rate per 1,000 of Strength.	Death-rate per 1,000 of Strength.	Died out of each 100 Cases treated.
Lucknow	2,143	58·8	9·33	12·82
Rawal Pindi	2,304	50·3	13·45	24·03
Bareilly	1,130	49·6	9·73	11·11
Sialkot	1,301	35·4	6·15	13·33
Meerut	1,774	34·4	9·02	22·86
Allahabad	1,024	21·5	3·91	14·81
Chakrata	1,137	20·2	5·28	26·09
Mhow	1,652	20·0	6·05	28·57
Agra	1,174	19·6	·85	3·85
Peshawar	1,445	19·4	7·61	35·48
Poona	2,030	19·2	6·90	34·15
Secunderabad, South	1,562	16·6	3·20	19·23
Umballa	1,632	15·9	6·13	33·33
Meean Meer	1,101	12·7	3·63	25·00
Bangalore, South	1,073	10·3	2·80	21·43
Quetta	2,162	9·7	1·85	18·18
Ferozepore	1,002	9·0	2·00	22·22
Fort William	1,094	8·2	3·66	44·44
Kurrachee	1,095	4·6	1·83	28·57
Belgaum	1,058	—	—	—

The two highest admission ratios of 1891 were not so high as the two highest of 1890. The two highest of 1891 were those of Lucknow and Rawal Pindi, both of which were higher than in the previous year. The lowest admission ratios were those of Belgaum, Kurrachee, and Fort William, the two first being lower than in 1890, and the last higher. Rawal Pindi had the highest death-rate, 13·45 per 1,000, and Belgaum (0·00), and Kurrachee (1·83) the lowest. Fatality varied from 44 at Fort William to 4 at Agra. Twenty-two stations had no enteric fever. Of these Bhamo, Moradabad, Hyderabad (Sind), Satara, Malliapuram, Pallavaram, Gnathong, Kuldunnah, Mount Abu, Ramandroog, Wellington Station, and Khandalla had also had no enteric fever in the preceding year.

The following table shows the greater liability of the young soldier to die from enteric fever, and the decreasing liability with advancing age:—

Statement showing the Death Ratios of the European Army from Enteric Fever at different Ages, together with Ratios of Liability to it.

Year.	Mortality from Enteric Fever and Ratio of Liability to it at Different Ages.					
	24 and under.		25 to 29.		30 to 34.	
	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.
1889	9·81	64·50	3·25	21·37	1·83	12·03
1890	7·78	65·93	2 84	24·07	1·18	10·00
1891	9·11	68·65	2·97	22·38	·71	5·35

Again, the following shows that the recently arrived soldier is more apt to die from enteric fever than he who has been longer in the country, and that with increased length of service in India the liability to death from enteric fever rapidly diminishes :—

Statement showing the Death Ratios of the European Army from Enteric Fever at different Periods of Residence in India, together with the Ratios of Liability to it.

Year.	Mortality from Enteric Fever, and Ratio of Liability to it at Different Periods of Residence in India.					
	1st and 2nd Years.		3rd to 5th Year.		6th to 10th Year.	
	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.
1889	11·65	57·02	4·20	20·56	2·43	11·89
1890	10·21	66·47	2·98	19·40	2·17	14·13
1891	11·60	64·19	3·64	10·14	2·23	2·34

As in former years, medical officers were usually unable, even to their own satisfaction, to trace out in any given outbreak a definite insanitary condition to which the outbreak might with certainty be attributed. Most medical officers lay stress on the influence of climate acting on young and unseasoned soldiers; many noticing that increase of the disease in a station is connected with the arrival of drafts from the old country, and that these bodies of men afterwards gradually become "acclimatised." In many cases, from what is known of the period of incubation of enteric fever, it was believed that these drafts had imbibed the active cause of the disease on their way inland from the port of landing, the men being inexperienced, and the arrangements made to protect their inexperience being insufficient. Many medical officers suspect strongly the bazar supplies, especially the bazar drinks, obtained privately by the men; and also impure water drunk casually by soldiers out walking or on the march. Indeed, in 1891, more than ever, medical officers, from a consideration of period of incubation, were struck by the great liability of men to contract enteric fever while on the march, especially on the march between the plains and the hills, this being, they think, probably due to the insanitary conditions encountered *en route*. In several cases chill or exposure to the sun, especially if combined with fatigue, is mentioned as at least a predisposing cause; and it is even hinted that enteric fever may sometimes be merely a more severe development of the simple continued fever which is apt to follow such exposures.

Bowel complaints.

The admission and death-rate from dysentery in the Army of India were slightly reduced (from 29·1 and 0·74 respectively in 1890 to 28·7 and 0·45), those from diarrhœa somewhat increased (from 29·5 and 0·04 to 31·5 and 0·07).

Dysentery was most prevalent in the Madras Army, least so in the Bombay Army. In Bengal the admission rate (23 per 1,000) was lower than in 1890, whereas in Madras (48 per 1,000) and Bombay (25 per 1,000), it was higher. In Bengal and Madras the admission ratio was lower than the 1881–90 decennial ratio, but in Bombay higher. Mortality from dysentery was highest in the Bombay Army (0·47), lowest in the Bengal Army (0·44). In all three Presidencies the death-rate was lower than in 1890; and in all it was lower than the 1881–90 decennial average.

Diarrhœa was most prevalent in the Bombay Army, least so in the Madras Army. In Madras only was the admission-rate lower than in 1890; but in all three Presidencies it was lower than the 1881–90 decennial average. Mortality from diarrhœa was highest in the Bombay Army (0·16), and absent in the Madras Army. In Bengal and Bombay mortality was higher than in 1890, but in Madras it remained the same. Compared with the 1881–90 decennial average it remained the same in Bengal, decreased in Madras, and increased in Bombay.

Hepatitis.

There was during the year under review a decrease both in the sickness and in the mortality due to hepatitis. The admission rate (19 per 1,000) had never been lower, and the death-rate (1·07) not since 1885. The ratios of Madras (26 and 1·58) were, as usual, higher than those of the other Presidencies. Those of Bombay (17 and 0·71) were the lowest. In all cases the ratios were below those of the decennia.

The percentage of hepatic abscess in the total causes of death, as well as the mortality per 1,000 of strength, was highest in Madras (9·3), lowest in Bombay (3·9).

Respiratory diseases.

That there was a considerable decrease in respiratory morbidity and mortality was due to the decline of the influenza epidemic. The admission-rate declined from 40 to 34 per 1,000, and the death-rate from 1·18 to 0·78. Bengal had the highest admission ratio (37 per 1,000), Madras the lowest (28). In all three Presidencies the admission ratio was lower than in 1890, and below the 1870–79 decennial average. Bengal had the highest mortality (0·83), Bombay the lowest (0·63). In Madras only was the mortality (0·76) higher than in the preceding year, and than the decennial ratio.

Venereal disease in the Army of India.

A careful investigation has been made of the venereal statistics of many years back, and especially into the cause of the increase of venereal disease of recent years with reference to the efficacy of lock hospitals. The following are the chief results arrived at*:—

(1.) Within at least three years of institution lock hospitals produced a decided effect in checking venereal disease in the stations where they were opened.

(2.) When certain lock hospitals were experimentally closed, the venereal ratio for those stations rose to a great height as compared with the ratio of those stations where lock hospitals were retained.

(3.) On the abolition of lock hospitals there was a special rise of the venereal ratio for those stations that had had lock hospitals.

(4.) Taking the period during which lock hospitals were in activity as a whole, the ratio for stations with lock hospitals was lower than that for stations without lock hospitals, although the ratio for the former class of stations had been higher than that for the latter class before the institution of lock hospitals.

(5.) When stations are divided into those that had and those that had not lock hospitals, it is found that venereal ratios rose in both, but less and less rapidly in the former than in the latter.

(6.) A very probable cause of the increase of venereal ratios in both classes of stations since 1877 was the increased importation of fresh, young, unmarried men,† the lock hospitals existing in certain stations having there exerted a certain amount of restraining influence upon the increase.

In addition, as explaining the fall of the venereal ratios in 1891, the following statements may be made:—

(7.) There was no marked change in respect of any of the factors mentioned in (6) above, but, on the other hand, the new cantonment hospitals were in existence.

(8.) While the medical officers of many stations say nothing about the working of the voluntary venereal arrangements in connexion with the new cantonment hospitals, the testimony of those medical officers who do mention the subject is sufficiently definite to show that these new arrangements were capable of producing, and did produce, a marked effect in diminishing venereal disease. But whether they produced the whole of the reduction in 1891 must be left undecided for the present.

(9.) Two medical officers suggest that the reductions in their stations was partly due to so large a proportion of the men of the garrison having been already syphilised during the preceding two years that the garrison had acquired a certain amount of immunity against primary infection.

(10.) The preceding two paragraphs give what has been learned by a study of the opinions of medical officers of *Station Hospitals* in their "Annual Reports of Medical Transactions." The returns from many of the new *Cantonment Hospitals* themselves are still wanting. Most of those that have been received do not show large attendances of either venereal or other patients; but it is not so important that large numbers should be treated as that the real spreaders of disease should come under treatment. *One* diseased woman, if visited by many men, may work great havoc in a station. Again, low admission among women may mean either absence of disease or failure to take advantage of the hospitals.

Venereal disease caused *directly* 29 per cent. of the admissions, 0·28 per cent. of the deaths, and 15 per cent. of the invaliding of the Army of India. The admission-rate

* The figures are under the consideration of Government. † In other words, the short-service system.

fell 103 per 1,000 of strength below that of 1890. All three Presidencies participated in the fall, but Bengal most.

Admissions from Venereal Diseases in the three Presidencies.

Presidency.	Admissions per 1,000.										
	1870–79.	1881–90.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Bengal* - -	209	366	281	291	363	394	356	373	491	504	395
Madras - -	198	367	289	307	350	394	400	376	452	491	402
Bombay* - -	191	339	218	292	272	370	337	357	481	515	417
India† -	203	360	270	294	343	389	361	371	482	504	401

* Excluding troops in Afghanistan during 1881. † Including troops in Afghanistan during 1881.

The year 1884 was the last year in which the Contagious Diseases Acts were in full force. The following table compares the venereal statistics of 1884, 1890, and 1891 :—

Army of India.

Venereal Admissions of 1884, 1890, *and* 1891 *compared.*

Venereal Diseases.	1891. Strength 67,030.		1890. Strength 67,823.		1884.* Strength 55,349.	
	Admissions into Hospital.	Ratio per 1,000.	Admissions into Hospital.	Ratio per 1,000.	Admissions into Hospital.	Ratio per 1,000.
Primary syphilis -	6,971	104·0 } 159·2	9,198	135·6 } 220·7	4,992	90·2
Ulcer of penis -	3,700	55·2 }	5,769	85·1 }		
Secondary syphilis -	4,024	60·0	4,497	66·3	1,352	24·4
Gonorrhœa - -	10,066	150·2 } 181·5	11,725	172·9 } 216·6	8,070	145·8 } 179·0
Other venereal diseases	2,101	31·3 }	2,963	43·7 }	1,835	33·2 }
Total - -	26,862	400·7	34,152	503·5	16,249	293·6

* From Annual Returns.

Regarding only the ratios to the right of the brackets, it appears that all the ratios of 1891, though lower than those of 1890, were higher than those of 1884.

In the Army of Bengal venereal disease caused *directly* 28 per cent. of the admissions, 0·29 per cent. of the deaths, and 11 per cent. of the invaliding. The admission rate fell about 109 per 1,000 of strength below that of 1890. In the Army of Madras venereal disease caused *directly* 31 per cent. of the admissions, 0·52 per cent. of the deaths, and 31 per cent. of the invaliding. The admission rate fell about 89 per 1,000 of strength below that of 1890. In the Army of Bombay venereal disease caused *directly* 30 per cent. of the admissions, no deaths, and 8 per cent. of the invaliding. The admission ratio fell 98 per 1,000 below that of 1890.

Invaliding.

In the whole Army of India 1,793 men were invalided, or 26·78 per 1,000 of average strength, against 1,715 and 25·29 in the preceding year. The ratio for 1891 was 0·57 per 1,000 less than that of the decennium 1881–90, which was 27·35. The proportion of invalids to strength was lowest in Bengal, highest in Madras.

Thirty-four per cent. of the total number invalided were discharged as unfit for further service. This proportion, as may be seen from the following table, was not much out of the common, though rather lower than in former years. In Bengal and Bombay the proportion of discharge was greater than in the previous year, and in Bombay it was high as compared with the past. The proportion was, as usual of late years, highest in Madras; but was there lower than it had been for some years.

Percentage of those invalided for discharge to total number invalided.

—	1887.	1888.	1889.	1890.	1891.
Army of India -	37	39	37	35	34
„ Bengal -	41	40	37	33	34
„ Madras -	43	43	46	43	36
„ Bombay -	22	29	25	32	33

The following table shows the diseases which caused invaliding of not less than 1 per 1,000 of strength :—

Bengal.		Madras.		Bombay.	
Diseases.	Invaliding Rate.	Diseases.	Invaliding Rate.	Diseases.	Invaliding Rate.
Debility - - -	3·37	Syphilis and gonorrhœa -	9·12	Debility - - -	6·12
Syphilis and gonorrhœa -	2·56	Debility - - -	2·79	Malarial fevers - -	2·98
Malarial fevers - -	2·27	Mental diseases -	2·11	Syphilis and gonorrhœa -	1·88
Tubercle of lungs - -	1·54	Hepatitis - -	2·03	Other nervous diseases -	1·81
Palpitation - - -	1·27	Dysentery -	1·88	Tubercle of the lungs - -	1·65
Injuries - - -	1·17	Malarial fevers - -	1·88	Injuries - - -	1·57
Hepatitis - - -	1·15	Tubercle of the lungs -	1·51	Palpitation - - -	1·26
Mental diseases - -	1·03	Valve disease of the heart -	1·13	Diseases of the ear - -	1·26
Other nervous diseases -	1·03			Mental diseases - -	1·18
				Valve disease of heart -	1·02

Debility and venereal diseases head the list in Bengal and Madras, and debility, malarial fevers, and venereal diseases in Bombay.

There was a decrease in the ratio of invaliding from mental disease in the Army of India, and an increase only in the Army of Madras. There were 48 cases of melancholia, 20 of dementia, and 12 of mania.

The percentage of men who were invalided while under 25 years of age to the whole number invalided was 54·01 for the Army of India against 53·04 in the preceeding year. The percentage of men under 25 in the strength of the Army of India was 51 against 50 in the previous year.

Of the total number of men invalided 30 per cent. were of less than two years' service, and 77 per cent. were of less than five years' service. With this is to be considered the fact that 80 per cent. of all the men in the strength of the army in 1891 were of less than five years' service.

The percentage to total invaliding of invaliding in the first four years of Indian service was 48 in the period 1871–75, 68 in the period 1881–85, 68 in the period 1886–90, and 63 in 1891; while the percentage of men invalided in the first four years of service who were under 30 years of age has risen from 73 in 1871–75 to 95 in 1890. Of the men invalided under four years of Indian service in 1891, 72 per cent. were also under 25 years of age.

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The average strength of women remaining nearly the same, the ratios of sickness and mortality decidedly improved.

Strength, sickness and mortality of women in the Army of India.

Years.	Average Strength.	Admission-rate per 1,000.	Constantly sick-rate per 1,000.	Death-rate per 1,000.
1881–90 - -	33,517	837·5	30·6	18·86
1890 - -	3,130	789·5	29·4	15·02
1891 - -	3,137	748·8	27·1	14·03

The chief causes of admission were debility, ague, and the diseases peculiar to women. Among the chief diseases which caused increased admission were cholera, simple continued fever, dysentery, and puerperal affections; while there was a

diminution in influenza, small-pox, respiratory diseases, and rheumatism. The admission ratio from influenza fell from 19·5 to 1·9 In the Bengal Presidency the admission rate from all causes was 679, in Madras 960, and in Bombay 673; Bengal and Bombay showing a decrease, as compared with the previous year, Madras an increase. Comparing the three Presidencies with reference to the incidence of certain diseases, Bengal had the highest ratio for influenza, cholera, enteric fever, ague, and puerperal affections; Madras the highest for respiratory diseases, phthisis, debility, bowel complaints, rheumatism, diseases peculiar to women, and entozoa. The constantly sick-rate was highest in Madras, lowest in Bombay.

The mortality among women was lower than in any year since 1885. The chief causes of death were, in order, puerperal affections, cholera, enteric fever, and diseases of the nervous system. The chief increase of mortality was in cholera, and the chief decrease in circulatory, respiratory, and bowel complaints. In the Bengal Presidency the death rate was 17·30, in Madras 12·63, and in Bombay 6·54; Bombay being the only Presidency that had a lower death-rate than in the previous year, a death-rate less than a third of that of 1890. Comparing the three Presidencies with regard to mortality from certain diseases, Bengal had the highest ratio for cholera, dysentery, hepatic abscess, enteric fever, diarrhœa, and puerperal affections; Madras the highest for remittent fever, heatstroke, and pneumonia; and Bombay the highest for circulatory diseases. Bengal had no deaths from respiratory diseases or tubercle of the lungs; Madras none from bowel complaints, hepatitis, or tubercle of the lungs; Bombay none from fevers, bowel complaints, hepatitis, tubercle of the lungs, respiratory diseases, debility, or puerperal affections. In Bengal the chief increase was in cholera, enteric fever, and puerperal affections; in Madras the chief increase was in fevers; in Bombay the chief decrease was in enteric fever, tubercle of the lungs, and puerperal affections.

Statistics of children.

The decline in the average strength of children continued. Sickness was reduced, but mortality was increased:—

Strength, sickness and mortality of children in the Army of India.

Years.	Average Strength.	Admission-rate per 1,000.	Constantly sick-rate per 1,000.	Death-rate per 1,000.
1881–90 - - -	62,862	633·5	23·4	50·22
1890 - - -	5,912	564·3	20·3	47·02
1891 - - -	5,886	509·0	19·2	49·27

The chief causes of admission were, in order, ague, respiratory diseases, and debility. The greatest increase of admission was in cholera, "other fevers," eye diseases, &c.; and the greatest decrease in influenza, small-pox, and hepatitis. In the Bengal Presidency the admission rate was 406, in Madras 740, and in Bombay 493; the last being the only Presidency which had a higher ratio than in the previous year.

The mortality among children was higher than it had been since 1888. The chief causes of death were, in order, debility, convulsions, teething, diarrhœa, respiratory diseases, tubercle, dysentery, measles, remittent fever, cholera, and diphtheria or croup. The greatest increase of mortality was in cholera, whooping cough, tubercle of the meninges, pneumonia, and teething; and the greatest decrease in tubercle of abdominal organs, convulsions, and bowel complaints. In the Bengal Presidency the death ratio was 44·33, in Madras 53·16, and in Bombay 57·50; Bengal being the only Presidency which had a lower death-rate than in the previous year, Madras showing the greatest increase, and Bombay the highest death-rate.

Native Troops.

Sickness and mortality in 1891.

The health of the Native Army of India was better than in the preceding year, though the death-rate was still high, there having been an increase of cholera mortality. Influenza was still present, but in greatly reduced amount.

Sickness and Mortality of the periods 1877–81 *and* 1881–90, *and of the years* 1890 *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				
		Admissions into Hospital.	Constantly Sick.	Deaths from		Mortality, including absent Deaths.
				Cholera.	All Causes.	
1877–81 -	118,669	1,422	48	1·94	24·90	27·40
1881–90 - -	116,712	1,054	35	1·28	13·44	16·91
1890 - -	127,746	1,137	39	1·83	15·91	18·64
1891 - -	128,600	972	35	2·64	15·44	19·34

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were cholera, bowel complaints, hepatic abscess, scurvy, and rheumatism. Among those with lessened rates were influenza, small-pox, all fevers except enteric, spleen diseases, pneumonia, venereal diseases, and eye diseases. Ague caused 44 per cent. of the total admissions.

The chief causes of death were cholera, pneumonia, remittent fever, ague, respiratory diseases other than pneumonia, injuries, and dysentery. Among the diseases which caused increased mortality were cholera, enteric fever, ague, hepatitis, spleen diseases, respiratory diseases other than pneumonia, and circulatory diseases. Among those from which mortality was lessened were pneumonia, scurvy, bowel complaints, remittent fever, and suicide. Cholera caused 17 per cent. of the total deaths, and pneumonia 16 per cent.

The chief causes of invaliding in the Native army were debility, rheumatism, diseases of the lymphatic system, and respiratory diseases.

If the statistics of Native troops be compared with those of European troops, it will be seen how much less the Native soldier suffered from enteric and simple continued fevers, hepatic affections, circulatory diseases, tonsillitis, heatstroke, and venereal diseases, and how much more he suffered from ague, remittent fever, spleen diseases, dysentery, pneumonia, eye diseases, scurvy, diseases of the integuments, and entozoa, than his European comrade.

rmy of engal.

The health of the Native Army of Bengal in the year under review improved, though the increased prevalence of cholera prevented the death-rate from sinking to a usual level.

Sickness and Mortality of the ten-year periods 1867–76 *and* 1881–91, *and of the years* 1890 *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				
		Admissions into Hospital.	Constantly Sick.	Deaths from		Mortality, including absent Deaths.
				Cholera.	All Causes.	
1867–76 - - - -	39,508	1,360	42	2·12	13·84	17·25
1881–90 * - - - -	55,244	1,200	38	1·15	14·27	18·22
1890* - - - -	64,080	1,306	42	3·28	19·16	21·82
1891* - - - -	66,230	1,021	35	3·73	17·32	18·10

* Including Punjab Frontier Force, but excluding certain men on escort duty in 1891.

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were respiratory diseases other than pneumonia, injuries, cholera, enteric fever, phthisis, scurvy, and rheumatism. Among those with lessened rates were influenza, ague, pneumonia,

dysentery, remittent fever, simple continued fever, spleen diseases, and venereal diseases. Ague caused 43 per cent. of the total admissions.

The chief causes of death were cholera, pneumonia, remittent fever, injuries, respiratory diseases other than pneumonia, ague, dysentery, tubercle of the lungs, diarrhœa, and debility. Among the diseases which caused increased mortality were injuries, simple continued fever, respiratory diseases other than pneumonia, cholera, and enteric fever. Among those from which mortality was lessened were dysentery, pneumonia, diarrhœa, scurvy, and remittent fever. Cholera caused over 21 per cent. of the total deaths, and pneumonia 19 per cent.

The chief causes of invaliding were debility and rheumatism.

Corps of Central India and Rajputana.

In all respects the statistics of the corps in Central India and Rajputana were better than in the previous year.

Sickness and Mortality of the ten-year period 1881–90 *and of the years* 1890 *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				
		Admissions into Hospital.	Constantly Sick.	Deaths from Cholera.	Deaths from All Causes.	Mortality including absent Deaths.
1881–90	5,161	709	21	·43	8·27	9·46
1890	5,118	702	21	·78	9·96	9·96
1891	5,175	629	20	·58	7·73	8·96

The chief causes of admission were ague, injuries, and diseases of the integuments. Among the diseases with raised admission rates were bowel complaints, heatstroke, guineaworm, remittent fever, and venereal diseases. Among those with lessened admission rates were influenza, respiratory diseases, spleen diseases, phthisis, simple continued fever, and cholera. Ague caused 36 per cent. of the total sickness.

The chief causes of death were pneumonia and remittent fever. Among the diseases with increased mortality were remittent fever, heatstroke and injuries. Among those with lessened mortality were respiratory diseases, debility, ague, and cholera. Pneumonia caused 35 per cent. of the total deaths, and remittent fever 20 per cent.

Madras Army.

The health of the Native army of Madras was bad; the admission, constantly sick, and death rates being all higher than any recorded during the previous ten years. This was in great part due to cholera and malarial affections among the troops in Burma.

Sickness and Mortality of the ten-year period 1881–90 *and of the years* 1890 *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				Mortality, including absent Deaths.
		Admissions into Hospital.	Constantly Sick.	Deaths from Cholera.	Deaths from All Causes.	
1881–90	25,960	835	33	1·98	12·99	27·87
1890*	26,032	924	41	·54	15·63	20·64
1891	26,088	1,017	46	1·99	20·05	27·28

* Excluding certain men in the Chin Lushai Expedition.

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were cholera, spleen diseases, pneumonia, dysentery, ague, circulatory diseases and guineaworm. Among those with lessened admission rates were influenza, small-pox, "other fevers," simple continued fever, and phthisis. Ague caused 46 per cent. of the total sickness.

The chief causes of death were ague, cholera, debility, dysentery, remittent fever, and diarrhœa. Among the diseases which caused increased mortality were cholera, ague, respiratory diseases, circulatory diseases, and bowel complaints. Among those

from which mortality was lessened were remittent fever and simple continued fever. Ague caused 18 per cent. of the total deaths, cholera 10 per cent., and remittent fever and pneumonia each nearly 8 per cent.

The chief causes of invaliding were debility and rheumatism.

The following table shows the statistics of all the troops serving in Burma and the Andamans. Of these troops the Madras army furnished 83 per cent.

Average Strength.	Ratio per 1,000 of Strength.			
	Admissions into Hospital.	Constantly Sick.	Deaths from	
			Cholera.	All Causes.
11,401	1,676	76	1·75	36·31

Bombay Army.

The health of the Native Army of Bombay markedly improved, though mortality from cholera was higher:—

Sickness and Mortality of the ten-year period 1881–90 *and of the years* 1890 *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				Mortality, including absent Deaths.
		Admissions into Hospital.	Constantly Sick.	Deaths from		
				Cholera.	All Causes.	
1881–90 - -	23,140	1,151	38	1·12	14·58	16·74
1890* - -	24,032	1,139	35	·12	10·99	12·92
1891* - - -	23,780	978	31	1·26	9·63	12·34

* Excluding certain men on escort duty.

The chief causes of admission were ague, diseases of the integuments, and injuries. Among the diseases with raised admission rates were cholera, small-pox and enteric fever. Among those with lessened rates were influenza, simple continued fever, and respiratory diseases. Ague caused 46 per cent. of the total sickness.

The chief cause of death were pneumonia, remittent fever, cholera, respiratory diseases other than pneumonia, ague, and dysentery. Amongthe diseases which caused increased mortality were cholera, enteric fever, and malarial fevers. Among those with lessened mortality rates were simple continued fever, pneumonia, injuries, and dysentery. Pneumonia caused 18 per cent. of the total deaths, and cholera and remittent fever each over 13 per cent.

The chief causes of invaliding were debility and respiratory diseases.

Hyderabad Contingent.

The health of the Hyderabad Contingent was not so good as in the preceding year; for though the admission rate was lower, the constantly sick and death rates were considerably increased, and cholera mortality rose from zero to 1·13 per 1,000 of strength.

Sickness and Mortality of the ten-year period 1881–90 *and of the years* 1890 *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				Mortality including absent deaths.
		Admissions into Hospital.	Constantly sick.	Deaths from		
				Cholera.	All causes.	
1881–90 - -	6,673	590	20	·78	6·28	8·11
1890 - -	7,071	553	17	—	4·81	6·71
1891 - - -	7,063	529	9	1·13	6·09	7·83

The chief causes of admission were ague, diseases of the integuments and injuries. Among the diseases with raised admission rates were cholera, bowel complaints, scurvy, circulatory diseases, and malarial fevers. Among those with lessened rates were influenza, "other fevers," respiratory diseases, phthisis, and guineaworm. Ague caused 34 per cent. of the total sickness.

The chief causes of death were cholera, pneumonia, other respiratory diseases, and injuries. Among the diseases which caused increased mortality were cholera, respiratory diseases other than pneumonia, and injuries. Among those with lessened rates were pneumonia and circulatory diseases. Cholera caused 19 per cent. of the total deaths, and pneumonia 16 per cent.

Comparison of corps.

Having considered individually the health statistics of the several portions of the Native Army of India in the foregoing paragraphs, it will now be convenient to contrast the main features of the same; and for ready reference the chief results are brought together in the following table:—

Corps.	Total Deaths per 1,000, including Absentees.	Average Strength present.	Ratio per 1,000.			
			Admissions into Hospital.	Constantly Sick.	Deaths from Cholera.	Present Deaths from all Causes.
India	19·34	128,600	972	35	2·64	15·44
Bengal Army	18·10	66,230	1,021	35	3·73	17·32
Corps of Central India and Rajputana	8·96	5,175	629	20	·58	7·73
Madras Army	27·28	26,088	1,017	46	1·99	20·05
Bombay Army	12·34	23,780	978	31	1·26	9·63
Hyderabad Contingent	7·83	7,063	529	19	1·13	6·09

As usual, the health of the Hyderabad Contingent and of the Corps of Central India and Rajputana was the best. Sickness and mortality were greatest in the Madras army. The comparison is carried into greater detail in Table VII.

Geographical groups of India.

The new geographical groups adopted have been described in page 45 of this Abstract.

Of the 12 annual ratios of constantly-sick, six were higher than the ratio of India and six lower, the highest ratios being those of the second, third, and first groups, and the lowest that of the tenth. The highest admission ratio was that of the second group, and the lowest that of the eleventh. Burma Coast had the highest admission ratios from circulatory diseases, spleen diseases, and rheumatism; Burma Inland the highest from cholera, ague, and all causes; Assam the highest from small-pox, enteric fever, "other fevers," tubercle of the lungs, diarrhœa, venereal diseases, entozoa other than guineaworm, diseases of the integuments, and injuries; Bengal and Orissa the highest from remittent fever, nervous diseases, tonsillitis, and dysentery; the Indus Valley the highest from pneumonia; Central India the highest from guineaworm; the Western Coast the highest from hepatitis and urinary diseases; Southern India the highest from eye diseases; and the Hill Stations the highest from influenza, simple continued fever, respiratory diseases other than pneumonia and scurvy.

Of the 12 annual ratios of mortality five were higher than the ratio of India, and seven lower, that of the second group being highest, and that of the eighth lowest. Burma Coast had the highest death-rate from injuries; Burma Inland the highest rates from cholera, ague, dysentery, diarrhœa, debility, and suicide; Assam the highest from small-pox enteric fever, heatstroke, and tubercle of the lungs; Bengal and Orissa the highest from remittent fever, circulatory diseases, hepatic abscess, and spleen diseases; the Indus Valley the highest from pneumonia; the Western Coast the highest from hepatitis and urinary diseases; Southern India the highest from nervous diseases; and the Hill Stations the highest from respiratory diseases other than pneumonia, and from scurvy.

Principal diseases: Influenza.

Influenza, though still present in 1891, was very greatly diminished in amount and in generality. It has already been mentioned that in proportion to strength the Hill Stations were most severely affected. The regions where most cases occurred were the Punjab, the North-Western frontier, and the Indus Valley. The disease began in May, and reached its maximum in June, decreased from that in November, and rose again steeply in December. Most of the cases in June occurred at Jhelum, and most of the

cases in December at Bhuj. The admission-rate in the Native army was 7·0 per 1,000 of strength, the mortality 0·09 per 1,000, of strength, and the fatality 1·33 per cent. of cases treated, against respectively, 6·3, 0·41, and 0·63 in 1890. The following table shows that the natives were more severely affected than the European troops, less severely than the prisoners, It shows also how both sickness and mortality from pneumonia were diminished in all three bodies; and how in all three admission from ague, simple continued fever and all causes decreased:—

	Per 1,000 of Average Strength.											
			Increase or Decrease as compared with 1890.									
	Influenza.		Pneumonia.		Other Respiratory Diseases.		Simple continued Fever.		Ague.		All causes.	
	Admission.	Death.	Admission.	Death.	Admission.	Death.	Admission.	Death.	Admission.	Death.	Admission.	Death.
European Troops	5·5	·04	−2·0	− ·36	−3·5	−0·3	−12·7	−	−10·6	+0·2	−141·1	+2·05
Native Troops -	7·0	·09	−5·1	−1·43	+1·6	+·37	− 7·0	−·04	−19·4	+3·3	−164·9	− ·47
Prisoners - -	19·0	·29	−1·6	− ·84	+3·5	+1·08	− 7·7	−·02	77,136·3	−·07	−189·1	+ ·40

Cholera.

Most cases of cholera occurred in April and May, when Manipur, Assam, and Upper Burma were specially affected. In the second half of the year the disease was more scattered. The admission-rate was 4·5 per 1,000 of strength, the death-rate 2·64 per 1,000 of strength, and the fatality 56·77 per cent. of cases treated, against respectively, 2·9, 1·83, and 61·29 in 1890.

Fevers.

To fevers returned as malarial were due 45 per cent. of the sickness and 19 per cent. of the mortality of the Native army. The admission ratio per 1,000 of strength from these fevers fell in 1891, while the death-ratio rose.

The ratio of admission from enteric fever in the Native army in 1891 was 0·3 per 1,000 of strength. Since, at least, 1880 this ratio has never been higher than 0·3, and has usually been 0·2. In the same period the extreme mortalities were 0·14 and 0·04. The mortality in 1891 was 0·13, as against 0·07 in 1890. The following table shows that the ratios for European troops are very unlike those for Native troops and prisoners:—

Admission and Death-rates per 1,000 *from* Enteric Fever *in the European Troops, Native Troops, and Jails of India compared.*

	1877 to 1886.		1891.	
	Admissions.	Deaths.	Admissions.	Deaths.
European troops - - - -	8·9	3·15	20·4	5·76
Native troops - - - - -	·2	·10	·3	·13
Jail population - - - -	·2	·10	·2	·08

Post-mortems are rarely obtained in the case of Native soldiers; but among prisoners nearly every fatal case of disease is subjected to *post-mortem* examination. Under these circumstances the fact that the ratios of prisoners and sepoys for a ten-year period are practically identical appears to show that the Native troops really suffer less than the European. Again, the following table shows that the fever mortality in the European and Native armies is not the same in amount:—

Fever Mortality of Native Troops compared with that of European Troops in 1891.

Causes of Deaths.	Died per 1,000 of average Strength.		Relative Liability in Percentages.			Percentage in Deaths from all Causes.	
	European Troops.	Native Troops.	European Troops.	Native Troops.	Total=100.	European Troops.	Native Troops.
Ague	·18	1·32	12·0	88·0	100	1·1	8·6
Remittent fever	·42	1·57	21·1	78·9	100	2·6	10·2
Simple continued fever	·10	·09	10·0	90·0	100	·1	·6
Enteric fever	5·76	·13	97·8	2·2	100	36·2	·9
Total	6·37	3·11	67·2	32·8	100	40·0	20·3

The total fever mortality among the Native troops in 1891 was to the total fever mortality among European troops as 1 : 2·0. For the period 1877—86 the corresponding ratio was 1 : 1·4, and for 1890 it was 1 : 1·9. Again, among European troops 40 per cent. of all deaths in 1891 were from fevers: only 20 per cent. among Native troops. It appears, then, that Native soldiers and prisoners are less liable to contract enteric fever than Europeans are. The possible causes of this have been discussed in previous reports, and no new light has been thrown on the subject during the year under review.

In the whole Native army of India, 35 cases with 17 deaths were returned as enteric fever, as against 18 with 9 in 1890. Of the deaths nine were in the Bengal army, two in the Madras army, five in the Bombay army, and one in the Hyderabad Contingent.

Dysentery.

From dysentery the admission-rate was higher, but the death-rate lower, than in the preceding year; the former by 1·8 and the latter by 0·24 per 1,000 of strength. On comparing the tables for European troops with those for Native troops, it will be seen that the death-rate of Natives from dysentery was to that of Europeans as 1·9 : 1, and that dysentery caused 5·6 per cent. of all the deaths of Native soldiers, but only 2·8 per cent. of the deaths of European soldiers. In 1890 these percentages were respectively 7 and 5.

Respiratory diseases.

The following table shows the ratios of admission and mortality from respiratory diseases in the principal divisions of the Native army:—

Period.	Ratio per 1,000 of Strength.											
	India.		Bengal.*		Corps of Central India and Rajputana.		Madras.		Bombay.		Hyderabad Contingent.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1881–85	56	4·24	56	4·15	38	3·37	27	1·53	91	6·73	25	1·40
1886	51	3·68	51	3·28	34	2·10	28	1·99	81	7·11	23	·94
1887	45	3·08	49	*3·57	29	1·88	20	1·20	69	4·42	22	·99
1888	39	2·68	41	*3·70	22	1·53	22	1·01	59	2·50	22	·96
1889	42	3·14	45	*4·03	43	2·71	25	1·79	58	2·55	26	2·59
1890	55	4·62	60	*6·24	41	4·89	32	1·65	78	4·37	25	1·69
1891	50	3·56	61	*4·63	32	3·29	36	2·07	50	2·74	20	1·98

* Including Punjab Frontier Force.

Except in the case of Bengal and Madras, the ratios were considerably more favourable than in the previous year. This was probably due to the diminution of influenza. Decrease was greatest in the case of Bombay, and increase in the case of Madras. All the corps ratios, though still high, compare favourably with the preceding year. The highest mortality from respiratory diseases other than pneumonia was in the Hill Stations.

The following table gives the admission and death-rates per 1,000 from pneumonia in 1891, and shows a general improvement, except in the case of Madras:—

Period.	India.		Bengal.		Corps of Central India and Rajputana.		Madras.		Bombay.		Hyderabad Contingent.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1890 - -	16·7	3·96	22·4	5·40	17·6	3·91	4·0	1·38	16·8	3·79	7·8	1·41
1891 - - -	11·6	2·53	14·9	3·35	12·4	2·71	7·2	1·53	9·5	1·77	3·7	·99

Then follows a table from which may be seen at a glance the incidence of mortality from pneumonia in the various geographical groups:—

Deaths from Pneumonia.

	Groups.												
	Burma Coast and Bay Islands.	Burma Inland.	Assam.	Bengal and Orissa.	Gangetic Plain and Chutia Nagpur.	Upper Sub-Himalayan.	Indus Valley and N. W. Rajputana.	S. E. Rajputana, Central India and Gujarat.	Deccan.	Western Coast.	Southern India.	Hill Stations.	Army of India.
Death-rates per 1,000 of average annual strength.	2·84	1·69	3·71	·64	1·98	2·77	6·08	1·78	1·58	·54	1·29	4·29	2·53
Percentages in total deaths.	14·0	4·2	15·1	3·9	22·2	23·2	41·5	25·0	20·6	6·9	16·9	24·1	16·4

It shows well the high mortality from pneumonia in the Indus Valley, and next to that in the Hill Stations. It also shows the high percentage of pneumonia to the total death-causes in those regions. Again, from the following it may be gathered that in 1891 the mortality of Native soldiers from pneumonia was more than four and a half times as great as that of European soldiers.

Cause of Death.	Died per 1,000 of Average Strength.		Relative Liability in Percentages.			Percentages in Deaths from all Causes.	
	European Troops.	Native Troops.	European Troops.	Native Troops.	Total = 100.	European Troops.	Native Troops.
Pneumonia - -	·54	2·53	17·6	82·4	100	3·4	16·4

Venereal diseases.

The following statements are given to correspond with those already given for European troops. The first shows that the venereal ratio for India of 1891 was somewhat lower than that of 1890; and that the ratios of the armies of Bengal, Madras, and Bombay, were reduced, while the ratios of the two smaller corps were raised.

Venereal Disease in the Native Army of India.

Corps.	Admission per 1,000 of Strength.			
	1866.	1884.	1890.	1891.
Bengal Army - - -	47·6	31·3	39·7*	35·5*
Corps of Central India and Rajputana	59·3	18·1	19·3	21·1
Madras Army - - -	22·6	22·6	48·9	42·7
Bombay Army - - -	No record	32·1	47·5	47·0
Hyderabad Contingent - -	No record	16·4	19·7	23·5
India - - - -	Incomplete	27·9†	41·4†*	37·9*†

* Including Native drivers of European batteries. † Including mixed troops of Bengal, Madras, and Bombay.

The second shows, taking the figures to the right of the brackets, that, while secondary syphilis remained the same, the other ratios were reduced.

Venereal Diseases.	1884.* Strength 127,477. Admissions into Hospital.	1884.* Strength 127,477. Ratio per 1,000.	1890. Strength 127,746. Admissions into Hospital.	1890. Strength 127,746. Ratio per 1,000.	1891. Strength 128,600. Admissions into Hospital.	1891. Strength 128,600. Ratio per 1,000.
Primary syphilis	1,266	9·9 } 9·9	1,442	11·3 } 16·0	1,206	9·4 } 13·6
Ulcer of penis	—	— }	604	4·7 }	548	4·3 }
Secondary syphilis	609	4·8	883	6·9	887	6·9
Gonorrhœa	959	7·5 } 10·1	1,527	12·0 } 18·1	1,377	10·7 } 17·3
Other venereal diseases	333	2·6 }	788	6·2 }	853	6·6 }
Total	3,167	24·8	5,244	41·1	4,871	37·9

* From Annual Returns and excluding Native drivers of European batteries.

The third shows that the ratios of both European and Native troops for 1891 were lower than the corresponding ratios of 1890; that in the case of both European and Native troops in 1891 the Bombay army was worst, and the Bengal army best; and that in all cases, as usual, the ratios of the European troops were higher than those of the Native troops.

A Comparative Summary of Venereal Disease in the European and Native Armies.

	1884. European Troops. Admissions.	1884. European Troops. Ratio per 1,000 of Strength.	1884. Native Troops. Admissions.	1884. Native Troops. Ratio per 1,000 of Strength.	1890. European Troops. Admissions.	1890. European Troops. Ratio per 1,000 of Strength.	1890. Native Troops. Admissions.	1890. Native Troops. Ratio per 1,000 of Strength.	1891. European Troops. Admissions.	1891. European Troops. Ratio per 1,000 of Strength.	1891. Native Troops. Admissions.	1891. Native Troops. Ratio per 1,000 of Strength.
Army of Bengal	9,731	290·6	1,608	31·3	20,840	504·0	2,545	39·7	16,203	395·3	2,354	35·5
Army of Madras	3,308	306·7	635	22·6	6,733	491·2	1,272	48·9	5,357	402·1	1,115	42·7
Army of Bombay	3,127	291·6	750	32·1	6,579	515·5	1,141	47·5	5,302	417·1	1,118	47·0
Army of India	16,166	293·9	3,200	27·9	34,152	503·5	5,244	41·1	26,862	400·7	4,871	37·9

The fourth, again, shows that the secondary syphilis of Native troops underwent neither increase nor decrease, and that it runs at an altogether lower level than the secondary syphilis of European troops.

Comparison of the Secondary Syphilis Ratios of the European and Native Armies.

	1884.	1890.	1891.
European troops	24·4	66·3	58·5
Native troops	4·8	6·9	6·9

It is, of course, but natural that the ratios of the Native troops should be much less than those of the European troops, considering the very different environment of the two bodies of men.

Jails.

Sickness and mortality in 1891.

There was an increase, as shown in the subjoined table, of the average jail population in 1891. The admission and constantly sick rates were substantially reduced; but though the mortality from bowel complaints was lowered, the general death-rate was raised, principally owing to a decided increase in cholera mortality. The mortality from bowel complaints was unusually low, lower even than in the preceding year.

Statement showing the Strength, Sickness, and Mortality among the Prisoners of India during the years 1872–76, 1877–81, 1881–90, 1890, *and* 1891.

Year.	Average Strength.	Ratio per 1,000.				
		Admissions into Hospital.	Constantly Sick.	Deaths from Cholera.	Deaths from Dysentery and Diarrhœa.	Deaths from All Causes.
1872–76	99,758	1,016	?	2·86	13·48	36·24
1877–81	112,670	1,189	45	4·48	24·97	63·01
1881–90	89,978	1,113	39	2·91	11·72	34·96
1890*	96,610	1,232	40	1·44	8·98	31·49
1891†	101,019	1,043	37	3·09	8·42	31·89
* Including the subsidiary jails	99,324	1,226	39	—	—	31·10
† Including the subsidiary jails	104,435	1,046	37	—	—	31·50

The chief causes of admission were ague, dysentery, abscess, ulcer and boil, and diarrhœa. Among the diseases with raised admission-rates were cholera, bowel complaints, debility, and heatstroke. Among those from which admission-rates were lower were influenza, malarial fevers, pneumonia, hepatic affections, scurvy, and abscess, ulcer and boil. Ague caused 37 per cent. of the total sickness, and bowel complaints 16 per cent. The chief causes of death were, in order, dysentery, pneumonia, cholera, diarrhœa, other respiratory diseases, debility, remittent fever, injuries, and tubercle of the lungs. Among the diseases which caused increased mortality were cholera, heatstroke, respiratory diseases other than pneumonia, and injuries. Among those from which mortality was lessened were pneumonia, scurvy, phagedæna and bowel complaints. Bowel complaints caused 26 per cent. of the total deaths, respiratory diseases 23 per cent., and cholera 10 per cent.

The following statement shows for each administration the proportion of prisoners to each 10,000 of the population :—

Ratio of Prisoners per 10,000 *of Population in each of eight Administrations for* 1890 *and* 1891. (*Burma not available; Andamans excluded.*)

Presidency.	Years.	General Population, according to Census of 1891.	Prisoners.		
			Average Number.*	Proportion to 10,000 of Population.	Deaths per 1,000 of Average Strength.
Assam	1890	5,021,084	1,432	2·8	35·61
	1891		1,322	2·6	63·54
Bengal	1890	70,368,267	14,778	2·1	32·35
	1891		15,917	2·3	30·97
N.-W. Provinces and Oudh	1890	46,905,085	25,066	5·3	33·83
	1891		28,268	6·0	27·63
Punjab	1890	20,553,982	12,586	6·1	30·91
	1891		12,439	6·1	28·38
Bombay	1890	18,820,346	7,576	4·0	32·34
	1891		7,543	4·0	32·48
Berar	1890	2,840,406	992	3·5	18·15
	1891		1,065	3·7	11·27
Central Provinces	1890	8,817,185†	4,452	5·0	26·06
	1891		4,675	5·3	30·37
Madras	1890	30,835,771†	8,927	2·9	23·75
	1891		9,779	3·2	35·08

* Including subsidiary jails. † Census of 1881.

The following table shows the proportion in which some of the principal diseases entered into the composition of 100 deaths in each administration:—

Causes of Death.	Composition of 100 deaths.									
	Andamans.	Burma.	Assam.	Bengal.	North-Western Provinces and Oudh.	Punjab.	Bombay.	Berar.	Central Provinces.	Madras.
Cholera	—	15·0	14·9	11·4	12·7	3·4	1·2	—	—	25·8
Fevers	10·6	7·5	1·4	12·5	5·9	15·8	9·4	8·3	8·5	6·0
Pneumonia	4·8	10·1	9·5	13·3	15·9	31·0	34·2	16·7	20·4	4·7
Dysentery and diarrhœa	31·5	25·7	47·8	28·3	26·6	16·7	14·8	16·7	33·8	28·6
Tubercle of the lungs	2·3	4·6	—	4·4	5·3	4·6	2·1	—	1·4	2·2
Anæmia and debility	9·6	3·2	5·4	4·4	6·6	1·7	4·9	16·7	4·2	6·6
All causes	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

The Andamans had the highest mortality from debility, and, as usual, no cholera; Assam the highest mortality from cholera and bowel complaints, but no deaths from tubercle of the lungs; the North-Western Provinces and Oudh the highest mortality from tubercle of the lungs; the Punjab the highest mortality from fevers; Bombay the highest mortality from pneumonia; Berar the lowest mortality from bowel complaints, and no deaths from tubercle of the lungs; and Madras the lowest mortality from pneumonia.

In the Andamans, while the constantly sick rate (59 per 1,000) remained unchanged, a considerably lowered admission-rate (from 1,978 in 1890 to 1,588) was accompanied by a considerably raised death-rate (from 34·62 to 41·47). The mortality from bowel complaints was high. The chief cause of the increased death-rate was injury or exposure during the severe cyclone in November, many of the deaths being out of hospital. The chief causes of admission were ague, dysentery, abscess, and respiratory diseases other than pneumonia. The admission rates from bowel complaints and heatstroke were raised; while those from malarial fevers, respiratory diseases, scurvy, and abscess were lowered. The settlement remained free from cholera, and, as to the prisoners, from influenza. Ague caused 49 per cent. of the total sickness. The chief causes of death were dysentery, respiratory diseases other than pneumonia, remittent fever, and debility. The mortality from dysentery, debility, and phthisis was raised; while that from remittent fever, pneumonia, and slough was lowered. Dysentery caused 27 per cent. of the total deaths, and pneumonia 5 per cent.

Sickness in the Burma jails continued to decrease (the constantly sick rate having fallen from 38 in 1890 to 35 per 1,000), but the death-rate owing to the prevalence of cholera rose from 28·26 to 30·23. The chief causes of admission were simple continued fever, ague, dysentery, abscess, eye diseases, and diarrhœa. The admission rates from cholera, respiratory diseases, bowel complaints, heatstroke, and abscess were raised; while those from influenza, malarial fevers, phthisis, and scurvy were lowered. Simple continued fever caused 17 per cent. of the total sickness, and ague 11 per cent. The chief causes of death were dysentery, cholera, pneumonia, diarrhœa, and remittent fever. The mortality from cholera and remittent fever was raised, while that from phthisis, pneumonia, dysentery, debility, and slough was lowered. Dysentery caused 16 per cent. of the total deaths, cholera 15 per cent., and pneumonia 10 per cent.

The ratios of sickness and mortality show a great deterioration in the health of the prisoners of Assam. The constantly sick rate rose from 50 per 1,000 in 1890 to 70, and the death-rate from 37·16 to 66·91. This was due to cholera and malaria affecting prisoners *en route* while being withdrawn from the Lushai Hills Jail on account of the Manipur outbreak. The chief causes of admission were ague diarrhœa, dysentery, and abscess. The admission rates from cholera, malarial fevers, bowel complaints, scurvy, phthisis, and heatstroke were raised; while those from influenza, respiratory diseases, and abscess were lowered. Ague caused 40 per cent. of the total sickness. The chief causes of death were dysentery, diarrhœa, cholera, pneumonia and debility. The mortality from cholera, dysentery, debility, and phthisis was raised, while that from remittent fever and pneumonia was lowered. As in the preceding year, there were no deaths from sloughing disease. Dysentery caused 30 per cent. of the total deaths, cholera 15 per cent., and pneumonia 9 per cent.

The health of the prisoners of Bengal continued to improve. With the exception of the cholera death-rate, all the ratios were lower than in any other year. The constantly sick rate was 39 per 1,000, against 40 in 1890, and the death-rate 31·39 against 32·99. The chief causes of admission were ague, dysentery, diarrhœa, and simple continued fever. The admission ratios from respiratory diseases, cholera, phthisis, heatstroke, scurvy, and abscess were raised, while those from influenza, malarial fevers and bowel complaints were lowered. Ague caused 31 per cent. of the total sickness. The chief causes of death were dysentery, pneumonia, and cholera. The mortality from cholera, remittent fever, and pneumonia was raised, while that from bowel complaints, phthisis, debility, and slough was lowered. Dysentery caused 22 per cent. of the total deaths, pneumonia 13 per cent., and cholera 11 per cent.

The health of the prisoners of the North-Western Provinces and Oudh showed a marked improvement as compared with the previous year, except in cholera mortality. The constantly sick rate fell from 36 to 34 per 1,000, and the death-rate from 33·82 to 27·83. The chief causes of admission were ague, abscess, and dysentery. The admission rates from respiratory diseases, cholera, and phthisis were raised, while those from influenza, malarial fevers, bowel complaints, heatstroke, and abscess were lowered, and the admission rate from scurvy remained unaltered, Ague caused 33 per cent. of the total sickness. The chief causes of death were dysentery, pneumonia, and cholera. The mortality from cholera, phthisis, and debility was raised, while that from pneumonia, bowel complaints, and remittent fever, was lowered, As in the previous year, there were no deaths from sloughing. Dysentery caused 17 per cent. of the total deaths, pneumonia 16 per cent., and cholera 13 per cent.

The health of the Punjab prisoners improved, but there was some increase of cholera mortality. The constantly sick rate was 40 per 1,000, or seven less, and the death-rate declined from 31·29 to 28·31. The chief causes of admission were ague, abscess, diarrhœa, dysentery, and respiratory diseases other than pneumonia. The admission rates from cholera, respiratory diseases, bowel complaints, scurvy, phthisis, and heatstroke were raised, while those from influenza, malarial fevers, and abscess were lowered. Ague caused 57 per cent. of the total sickness. The chief causes of death were pneumonia, dysentery, and remittent fever. The mortality from cholera, remittent fever, and debility was raised, while that from respiratory diseases, bowel complaints, and phthisis was lowered. As in the previous year, there were no deaths from sloughing disease. Pneumonia caused 31 per cent. of the total deaths, dysentery 12 per cent., and cholera 3 per cent.

In the Bombay jails all the ratios showed improvement, except the general death-rate. The death-rate was raised from 32·81 in 1890 to 33·45 by respiratory disease after influenza in the cold weather. The chief causes of admission were ague and abscess. The admission rates from influenza, heatstroke, scurvy, and abscess were raised, while those from malarial fevers, respiratory diseases, bowel complaints, and phthisis were lowered, and the ratio of cholera remained unaltered. Ague caused 27 per cent. of the total sickness. The chief causes of death were pneumonia, other respiratory diseases, remittent fever, dysentery, and diarrhœa. The mortality from phthisis, pneumonia, and remittent fever was raised, while that from cholera, bowel complaints, debility, and slough was lowered. Pneumonia caused 34 per cent. of the total deaths, dysentery 7 per cent., and cholera 1 per cent.

The health of the prisoners of Berar showed a great improvement. The constantly sick rate decreased from 21 to 14 per 1,000, and the death-rate from 18·16 to 11·29. The chief cause of admission was ague. The admission ratios from bowel complaints and scurvy were raised, while those from malarial fevers, respiratory diseases, phthisis, and abscess were lowered. As in the previous year, neither cholera nor heatstroke occurred. Ague caused 43 per cent. of the total sickness. The chief causes of death were circulatory diseases, pneumonia, and debility. The mortality from debility was raised, while that from respiratory diseases, bowel complaints, and phthisis was lowered. As in the preceding year, no deaths occurred from cholera, remittent fever, or sloughing. Pneumonia caused 17 per cent. of the total deaths, and dysentery 8 per cent.

In the jails of the Central Provinces sickness was diminished, the constantly sick rate being 28 per 1,000 against 31 in 1890, but mortality was increased, the ratio being 30·37 against 26·06. There was an increase in mortality from bowel complaints, but, as in the preceding year, no mortality from cholera. The chief causes of admission were ague, diarrhœa, dysentery, and abscess. The admission-rates from phthisis,

pneumonia, heatstroke, and cholera were raised, while those from influenza, malaria, fevers, bowel complaints, scurvy, and abscess were lowered. Ague caused 39 per cent. of the total sickness. The chief causes of death were pneumonia, dysentery, and diarrhœa. The mortality from remittent fever, pneumonia, and phthisis was raised, while that from cholera, dysentery, debility, and sloughing was lowered. Pneumonia and dysentery each caused about 20 per cent. of the total deaths.

Among the Madras prisoners the constantly sick rate (28 per 1,000) diminished by 4 per 1,000 as compared with the previous year, but, from the prevalence of cholera the death-rate rose from 25·32 to 38·25. The chief causes of admission were diarrhœa, ague, and dysentery. The admission-rates from cholera and bowel complaints were raised, while those from influenza, remittent fever, respiratory diseases, phthisis, heatstroke, scurvy, and abscess were lowered. Diarrhœa caused nearly 20 per cent. of the total sickness, and ague 14 per cent. The chief causes of death were cholera, diarrhœa, dysentery, and debility. The mortality from cholera, bowel complaints, and remittent fever was raised; while that from pneumonia, phthisis, and debility was lowered. As in the preceding year, there was no mortality from sloughing. Cholera caused 26 per cent. of the total deaths, diarrhœa 15 per cent., dysentery 13 per cent., and pneumonia 5 per cent.

General Population.

Comparison of the returns from the different Provinces.

The highest provincial birth-rates were returned by the Central Provinces (43·09) and Berar (42·8), but in the former the ratio has been calculated on the population of 1881. In the remaining provinces the birth-rate ranged from 19·8 in Mysore to 36·27 in Bombay. The number of males born to every hundred females was greatest in the Punjab (114) and least in Coorg (103). The excess of births over deaths was greatest in Bombay (9·01 per 1,000 of population), and in the Central Provinces (7·55). There was an excess of deaths over births recorded in three provinces, viz., Bengal, Assam, and Coorg. The mean provincial death-rate ranged from 14 in Mysore to 40 in Berar.

The following statement shows the deaths recorded from all causes month by month in the different provinces :—

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratios of Deaths per 1,000 of Population.	
														1891.	1890.
Bengal	143,505	137,555	168,192	161,991	125,986	140,597	121,987	142,157	149,433	149,167	216,770	238,921	1,896,261	26·94	24·48
Assam	10,947	9,714	10,951	14,084	17,105	14,158	12,654	11,309	11,556	12,289	13,079	12,310	150,156	29·91	29·64
North-Western Provinces and Oudh.	113,728	101,116	85,763	101,855	131,484	132,864	133,538	104,330	116,917	141,370	149,014	148,753	1,460,732	31·14	37·27
Punjab	51,306	42,665	36,661	32,456	43,879	49,344	68,327	45,731	50,548	59,675	58,555	59,642	598,789	29·13	46·87
Central Provinces	20,481	18,607	19,187	22,091	26,654	30,542	24,945	25,667	30,285	36,456	32,576	25,873	313,364	35·54	32·52
Berar	6,312	4,927	5,122	6,192	7,599	7,037	7,267	15,134	20,508	16,997	10,364	8,099	115,558	40·6	35·4
Lower Burma	5,792	4,536	4,581	5,102	5,348	5,583	7,083	8,249	7,012	6,880	6,482	6,542	73,190	15·93	17·40
Madras Presidency	62,441	51,314	46,530	47,663	49,302	52,617	63,956	73,333	64,507	63,139	75,216	97,535	747,553	26·2	22·8
Bombay Presidency	39,201	34,493	35,120	39,674	39,891	38,179	41,024	47,207	48,313	43,636	44,477	61,917	513,132	27·26	28·18
Mysore	5,973	5,254	4,639	5,220	5,375	5,858	6,364	6,294	5,775	5,652	5,540	6,055	67,979	14·03	20·77
Coorg	272	265	204	265	334	405	423	379	280	299	327	318	3,771	21·79	25·32
Total	459,958	410,446	416,950	436,593	452,957	477,164	487,568	479,790	505,134	535,560	612,400	665,965	5,940,485		

In Bengal the registration of births was limited in the year under review to 141 towns in which 58,317 births were recorded, giving a birth-rate of 21·46 per 1,000 of the population. The ratios for the different towns ranged from 44·57 to 2·95, and were below 10 in 14 towns; between 10 and 20 in 48; between 20 and 30 in 58; between 30 and 40 in 20; and above 40 in only one. Male births were to female births in the proportion of 110 to 100, the disparity being attributed to the neglect of registration in the case of females. In most of the towns the recorded births are fewer than the deaths, though the Census shows that the population of these towns as a whole has increased at the rate of 92 per 1,000 in the ten years since the last

Census. This increase is not, however, equal in the two sexes, that of the female population being comparatively small. The Sanitary Commissioner remarks: "The "excess of deaths over births in so many towns is not easily explained. There is no "doubt that it is largely due to defective registration of births, but it is probable that "other causes also helped to bring about this result, viz., a disproportion of the sexes "in some places, and general unhealthiness as indicated by a high death-rate in others. "I am also convinced from personal investigation that even in the most advanced "municipalities the work of registration has been very much neglected."

Since the close of the year the duty of collecting vital statistics has been transferred from the municipalities to the town police. Birth registration has also been again made general over rural as well as town circles as in other provinces.

Deaths were registered throughout the province in both rural and urban circles, and the provincial death-rate for the year was 26·94, as against 22·91 in 1890, calculating on the 1891 census population in both cases. The higher rate in the year under review is not, the Sanitary Commissioner thinks, "due to better registration, although "that may have improved to some extent, but it is to be attributed to greater "unhealthiness as indicated by an abnormally high rate of mortality from cholera and "fever in most of the districts." The death-rates in the different towns ranged from 93·82 per 1,000 to 9·46; and in districts, exclusive of the towns, from 45·14 to 16·2. The provincial death-rate amongst infants under one year of age was 132·95 per 1,000, against 113 in 1890; and among children from one to five years of age, 37·11 against 27·53. The death-rates in the town of Calcutta among children at these ages were 392·64 and 61·02 respectively, and there is little doubt that the provincial rates, though improved, are considerably below the truth.

In the North-Western Provinces and Oudh 191,280 fewer births were recorded than in the previous year, which decrease the Sanitary Commissioner attributes to the excessive mortality in the previous year. The provincial birth-rate for the year was 33·26, compared with 37·38, the corrected rate for 1890. The district birth-rate ranged from 40·51 in Pilibhit to 18·32 in Dehra Doon, and was below 30 in ten of the 49 districts. In municipalities the birth-rate ranged from 57·27 it Fatehpur Sikri to 17·41 in the town of Dehra Doon. Of the 101 municipalities 20 recorded a birth-rate under 30, and 28 a rate over 40 per 1,000. The recorded deaths were fewer by 183,295 than in 1890, the death-rate being 31·14, compared with 35·1, the corrected rate for the previous year. The lessened mortality is explained by the absence of epidemic fevers, in the marked form of the previous year, the epidemic of influenza having practically disappeared, and autumnal fevers being much less prevalent. The highest death-rate in any district was 47·0 in Sultanpur, where cholera was prevalent; the lowest was 20·31 in the Dehra Doon district. The general death-rate of towns was 36·46, compared with 30·75, the rate for the districts exclusive of the towns. The death-rate for infants was 204·1, which is lower than in any previous year. In 20 districts the recorded deaths were in excess of the births. The recorded death-rate among "Christians" was only 8·5, but it is probable that death among Native Christians are often recorded under other religious denominations.

In the Punjab the number of recorded births was considerably below the average of previous year, and the birth-rate was 34 per 1,000. The decrease is attributed by the Sanitary Commissioner to the excessive sickness that prevailed in the last four months of the previous year, but in three of the four districts in which there was excessive mortality in the autumn of 1890, the birth-rate for 1891 was higher than the provincial birth-rate. The district birth-rates ranged from 39·9 in the Sialkot district to 15·9 in the Peshawar district. Low birth-rates were again recorded in the frontier districts. For every 100 female there were 114 male births registered, and the Peshawar district is again pre-eminent in this respect with a record of 162 male to every 100 female births. Whereas in 1890 the death-rate exceeded the birth-rate by 7·79 per 1,000, in 1891 the birth-rate was 4·89 per 1,000 greater than the death-rate. The death-rate was in excess of the birth-rate in eight districts. The death-rate for the province was 29·13 per 1,000, slightly less than the average of the previous five years if this is calculated on the population of 1891. The highest death-rate (41·98) was recorded in the Delhi district, and the lowest (20·24) in Hazara. The death-rate was above the average in January and February, a continuation of the unhealthiness at the end of the previous year, and was very abnormal in July; the result of an epidemic of influenza which beginning in May reached its height in July. In the autumn months the mortality was very much below the average, the result of less malarial fever, which is attributed to an unusually small rainfall. The

provincial death-rates for males and females show an unusual equality, being respectively 29·08 and 29·2; but the female mortality is in excess of the male in 14 districts. In the Delhi, Jullundur, and Ludhiana districts the female death-rates were respectively 4·15, 3·02, and 2·33 per 1,000 greater than the male; but in the Sialkot district, contrary to the experience of the previous year, the male death-rate was in excess. Among infants the female mortality was as usual excessive in the Jullundur and Amritsar districts, and this was the case also, in a less degree, in Ludhiana and Ferozpore.

The rural birth-rate was 33·88 and the death-rate 28·65, against 35·7 and 35·5 respectively in towns. The highest birth-rates in towns were 46 in both Jullundur and Sonepat; the lowest, 26, in Gujrat and Kohat. The highest death-rate, 49·69, was recorded at the town of Sadhaura; the lowest, 23·79, at Chunian.

In the Central Provinces the number of births registered was greater than in any year since 1881 except 1885, and exceeded the record for 1890 by 41,274. The district birth-rates, calculated on the census figures of 1881, ranged from 54·45 in the Nimar district to 35·58 in the Saugor district. There was an increased birth-rate in all the districts. The excess of male over female births was 6·74 per cent. for the province as a whole. The births exceeded the deaths in 14 of the 20 districts. The total number of deaths registered was greater than in any year except 1889, but the death-rate ranged from 46·84 in the Hoshangabad district to 25·65 in Bilaspur. The birth-rate in the *sadar* towns ranged from 53 to 21; the death-rate from 63 to 18. The number of persons fined under the municipal bye-laws for not registering births was 3,003, or 515 more than in 1890; but the total amount of the fines was R.3,573, or R.462 less than in the previous year. The percentage of the total deaths in infants under one year was 30; in children under five years, including infants, 45.

In Berar the provincial birth-rate was 42·8, which is higher than in any year since 1868 except 1885. In the six districts the birth-rate ranged from 47·6 in the Akola district to 34·8 in Wun. The birth-rate for the towns of the province as a whole was 40·5, and ranged from a maximum of 61·7 at Jamod to a minimum of 27·6 at Basim. In three of the thirty-three towns the birth-rate was over 50; in 18 between 40 and 50; in nine between 30 and 40; and in three below 30. The three towns returning birth-rates below 30 are among the largest of the municipal towns. In these towns the reporting of domestic occurrences is compulsory, but in no instance has any prosecution been undertaken to enforce the law. The Sanitary Commissioner says that in testing the registers at Amraoti, which is one of the towns in question, 12 out of 25 infants in arms could not be traced in the register; at another town, Akola, seven births out of 50 had been omitted; while at a third, Basim, five out of 55 were wanting. The birth-rate amongst the rural population as a whole equalled 43·1, and ranged in the different circles of registration from 70·1 to 23·4. For every 100 females 106·5 male births were registered. The proportion of still-births to live-births was 4·2 per cent. The provincial death-rate was 40·6, and the district rates range from 47·6 in Akola to 30·0 in Wun. Male deaths preponderated in every district, and in the province as a whole there were 109·5 deaths among males to every 100 in females. The death-rate for towns was 40·9, and ranged from 64·0 to 22·3. The mortality was, as usual in this province, highest in September, October, and August, the rise in sub-soil water during the rainy season being accompanied by increased mortality. The death-rate amongst children under five years of age was 108·3; and in infants under one year, 301·9 per 1,000.

In the Bombay Presidency, including Sind, the number of births recorded in 1891 exceeded that in 1890 by 41,562, and the birth-rate, calculated on the population of 1891 census, equalled 36·27 per 1,000. The birth-rate in the different collectorates ranged from 45·26 in Ahmednagar to 18·86 in the city of Bombay. The birth-rate exceeded 40 per 1,000 in 11 of the 24 collectorates, and the number of recorded births was higher than in 1890 in all but five of them. In the province as a whole there were 108·1 male births for every 100 females, but this proportion was exceeded in seven collectorates, the maximum figure being 131·77 in Hyderabad. The rural was higher than the urban birth-rate in all the collectorates except seven. Of the rural registration circles eleven returned a birth-rate of over 50 per 1,000; 90 a rate between 40 and 50; and 67 a rate between 30 and 40; while in 38 circles it was between 20 and 30, and in 16 below 20. Of these last 16, as many as 14 are in Sind, where registration is more defective than in the Bombay Presidency proper. Among towns the

birth-rate ranged from 56·92 at Sangamner to 12·43 at Thana, and was below 20 in five. The percentage of still-births to children born alive was 0·90 in the whole province; 9·15 in the city of Bombay; and 4·74 in Kanara. The total number of deaths recorded is greater by 49,516 than in 1890, and the death-rate equals 27·26. The ratios ranged from 42·11 in the Broach collectorate to 14·9 on the Sind frontier. In the city of Bombay the death-rate was 29·15, or 10·29 in excess of the birth-rate. There were 106·64 deaths among males for every 100 among females in the whole presidency, but the proportion is exceeded in many of the collectorates, the maximum being 132·25 in Thar and Parkar. The deaths among children under five years of age formed 43·79 per cent. of the total deaths; those in children less than one year old, 22·18 per cent. In 46 rural circles the recorded death-rate was less than 20 per 1,000. In 15 it was above 40; in 52 between 30 and 40; and in 109 between 20 and 30. The death-rate in towns ranged from 64 at Viramgam to 10·23 at Kalyan.

In Madras both the birth-rate (32·4) and the death-rate (26·2) were higher than in any previous year excepting 1877 in the case of the latter. In the case of the birth-rate the Sanitary Commissioner thinks that the increase is not altogether the result of improved registration, but may be taken as evidence that the depressing effects of the distress of 1889 are passing off. On the other hand, it would seem that the increase in the death-rate may be accounted for, in part at least, by the undoubted unhealthiness of the year, cholera and smallpox having both been unusually prevalent. The district birth-rates ranged from a maximum of 44·7 to a minimum of 22·7. Of the 22 districts, four returned a birth-rate of 40 per 1,000 or over, while in seven the rate recorded was below 30. Turning to the results recorded in the rural registration circles of the different *taluks*, it appears that four recorded birth-rates of over 50 per 1,000; 27 rates from 40 to 50; 82 between 30 and 40; 60 between 20 and 30; while in eight they were below 20. In 12 towns the birth-rate was over 40 per 1,000; in 31 it was between 30 and 40; and in 12 below 30 per 1,000. In 17 towns the birth-rate was lower than the death-rate. The births exceeded the deaths in all districts except Madras and South Arcot. In the former of these the deaths are believed to have been extraordinary on account of the prevalence of cholera, fevers, and bowel complaints; in the latter the excess is small. The highest death-rate (59·4) in districts occurred as usual in Madras. In the remaining districts the rate ranged from 13·5 to 35·3. The death-rate in the municipal towns as a whole was 31·8, and ranged from 64·3 to 17·3; that of the districts, exclusive of the municipal towns, 25·9 and ranging from 59·4 to 13·3. Of the *taluks*, three recorded a death-rate above 40; 44 between 30 and 40; 89 between 20 and 30; while in 45 the death-rate was below 20. The death-rate of children under one year of age per 1,000 of recorded births was 167·4. The ratios have all been calculated on the population of the census of 1881.

The statistics returned from the small province of Coorg are very imperfect. The recorded birth-rate for the year was 20·31 per 1,000, compared with 15·25 in the previous year; and the death-rate 21·79 per 1,000 against 25·32. The proportion of males born to every 100 females was 103·23; that of male to female deaths 121·82. The death-rate in Merkara, the only town, was 20, that of the province, excluding the town, nearly 22. The population of the province according to the census of 1891 was 173,055, compared with 178,302 in the census of 1881. The decline in population is due to the withdrawal of the military garrison from Merkara and to lessened immigration of coolies to the coffee estates. The proper inhabitants of Coorg have increased.

The population of Lower Burma under registration has increased from 3,653,629 in the last decade to 4,595,569 according to the census of 1891. The registration of vital statistics is still very imperfect even in the towns where it is carried on by a paid agency and is supposed to be compulsory. The total births registered amounted to 95,332 against 84,769 in the previous year, which gives a birth-rate of 20·74 per thousand of the population according to the new census. The districts yielded birth-rates ranging from 30·53 in the Tharrawaddy district to 12·88 in the district of Thongwa. In the province, as a whole, 106 male births were returned for every 100 females. The total deaths registered equalled 73,190 against 63,591 in 1890. There were 123 deaths in males to every 100 in females. The death-rate for the province was 15·93. The death-rates are still very low in the Tenasserim division and in nearly all the districts of the Irrawaddy division. The birth-rate in towns ranged from 47 at Myanaung to 12 at Maubin, the rate for the towns collectively being 21·68. The death-rate for the same towns was 29·60 and ranged from 40·26 at Myanaung to

11·95 at Ngathainggyaung. There is a remarkable disproportion in the sexes in some of the towns, especially in the large seaport towns. Thus at Rangoon there are 124,767 males to 55,557 females; at Akyab 29,208 males to 8,730 females. This may account in some measure for the low birth-rate, but it is not in these towns that the birth-rate is most deficient. As regards class registration, the death-rate is most deficient amongst Christians, only 7·16 per 1,000; and next amongst Mahomedans, 14·28. The death-rate in the rural districts as a whole, excluding the towns, was only 14·09. The Sanitary Commissioner hopes that some improvement may be effected in rural registration by the plan, recently introduced, of employing the vaccination staff in testing the registers. The registration of vital statistics has not yet been introduced into Upper Burma.

In Assam there were 143,548 births registered, against 138,326 in 1890, giving a birth-rate of 28·59, calculated on the population of the 1891 census. The ratios ranged from 34·09 in the Sylhet district to 21·32 in Kamrup, the average birth-rate in the Surma Valley being 32·96, and of the Brahmaputra Valley only 24·19. The provincial death-rate (29·91) exceeds the birth-rate by 1·32, and the district ratios for deaths range from 35·91 in Goalpara to 19·91 in Sibsagar. The records show 108 male births and 112 male deaths to every 100 female births and deaths respectively. The statistics received from the *sadar* towns, where "compulsory" registration is in force, are in most cases manifestly incorrect, but there were only 33 convictions for neglect of registration in the whole of these towns. The Sanitary Commissioner approves of a proposal that the police officers should inquire into the correctness of statistical returns when on tour in their districts.

History of Chief Diseases.

Cholera.

In the year under review cholera was again prevalent amongst the general population throughout almost the whole of India, and the total number of deaths recorded as due to it was 601,603 against 297,443 in 1890 and 428,923 in 1889. This is the highest figure recorded in any year since 1877, when there were 635,977 deaths returned from cholera. Compared with the previous year, every province, except Mysore, suffered more severely in 1891, and in Bengal and Assam the number of deaths from cholera has never been so great in any previous year on record.

Statement showing the Deaths from Cholera in the different Provinces in India from 1877 *to* 1891.

Year.	Bengal.*	Assam.	North-Western Provinces and Oudh.	Punjab.	Central Provinces.	Berar.	Rajputana.	Central India.	Bombay.	Hyderabad.	Madras.	Mysore.	Coorg.	Lower Burma.
1877	155,305	11,377	31,770	29	3,418	842	60	926	57,228	7,414	357,430	2,902	‡	7,276
1878	95,192	6,732	22,221	215	40,985	34,306	2,393	8,047	46,743	6,696	47,167	723	49	6,759
1879	136,363	17,415	35,892	26,135	27,575	223	918	2,784	6,937	6	13,296	14	—	1,828
1880	39,643	2,803	71,546	274	330	1	—	299	684	—	613	25	—	2,638
1881	79,180	5,010	25,865	5,207	9,140	3,404	197	581	16,694	1,721	9,446	25	3	5,239
1882	182,352	21,055	89,372	39	11,932	3,573	1,327	1,562	7,904	150	23,604	893	31	7,177
1883	90,439	14,908	18,160	190	16,235	27,897	797	1,740	37,954	1,947	36,284	124	—	2,185
1884	134,421	22,276	30,143	614	149	87	1,297	1,018	13,804	2,479	75,476	330	—	5,515
1885	173,767	7,753	68,457	1,936	21,868	3,683	1,615	4,624	37,287	1,387	58,109	2,677	—	7,685
1886	118,368	20,188	34,565	12	16,679	976	173	290	167	499	12,417	10	—	4,027
1887	172,578	7,941	200,628	8,804	12,576	14,396	2,612	8,868	25,711	2,831	28,359	832	3	2,649
1888	111,391	9,093	18,704	14,938	921	305	32	191	36,500†	2,057	58,677	1,015	2	15,982
1889	171,103	18,288	48,494	2,838	52,588	10,925	6,923	3,344	32,431	1,128	76,020	1,590	9	3,242
1890	145,885	15,396	80,295	3,401	4,787	847	2,746	3,132	3,259	—	35,288	1,326	5	1,076
1891	229,575	23,882	169,018	10,107	21,312	7,958	2,946	13,474	17,350	3,102	98,773	1,204	7	2,400

* Excluding Calcutta.

† Including four deaths, the monthly distribution of which is not known.

‡ Statistics not available.

The disease was at its minimum in January and February and at its maximum in the four months, April to July, as is shown in the following statement :—

Statement showing the Deaths from Cholera registered in the different Provinces by months, during the year 1891.

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratio of Deaths per 1,000 of Population.	
														1891.	1890.
Bengal - - -	15,694	15,305	26,775	44,769	26,818	18,306	20,049	14,548	6,844	6,466	13,652	20,349	229,575	3·26	2·21
Assam - - -	998	1,045	2,307	5,009	5,656	2,669	1,463	920	914	1,053	1,017	831	23,882	4·76	3·40
North-Western Provinces and Oudh.	718	1,115	2,077	13,273	31,915	34,453	32,018	12,110	10,301	10,213	10,842	9,978	169,013	3·60	1·82
Punjab - - -	—	—	—	14	167	181	1,595	2,263	3,375	2,193	266	53	10,107	0·49	0·18
Central Provinces - -	75	89	546	1,630	3,399	6,147	3,985	1,416	1,391	1,836	728	70	21,312	2·42	0·54
Berar - - -	9	2	36	—	—	34	368	3,139	3,081	1,186	95	8	7,958	2·8	0·3
Lower Burma - -	92	84	140	353	513	252	131	306	88	101	126	214	2,400	0·52	0·29
Madras Presidency -	5,912	2,837	1,971	2,937	2,702	3,462	9,856	16,258	9,672	7,064	12,280	23,822	98,773	3·5	1·2
Bombay Presidency -	256	149	63	214	1,315	2,656	3,698	4,437	3,427	901	412	322	17,850	0·95	0·20
Mysore - - -	68	23	71	63	68	187	142	215	154	95	41	77	1,204	0·25	0·32
Coorg - - -	—	—	—	—	—	—	—	—	—	—	7	—	7	0·04	0·03
Total - -	23,822	20,649	33,936	68,262	72,553	68,347	73,305	55,612	39,247	31,108	39,466	55,724	582,081		

The value of the following statement, which is inserted here as in former reports, is somewhat impaired by the fact that the ratios for Madras and the Central Provinces, as well as the mean mortality of the previous five years in all the provinces, have been calculated on the population of the 1881 census, but in the case of all the other ratios the 1891 census has been used :—

Province.	Mortality in 1891.	Mean Mortality of previous Five Years.	Urban Mortality.	Rural Mortality.	Per cent. of Villages attacked.	Maximum Mortality in Rural Circles.	Maximum Mortality in Towns.	Month of Maximum Prevalence.
Bengal - -	3·26	2·02	4·54	3·20	12·0	11·18	31·62	April.
Assam - -	4·76	2·84	4·22	4·77	29·8	11·91	38·63	May.
North-Western Provinces and Oudh.	3·60	1·73	2·55	3·68	12·7	17·59	35·44	June.
Punjab - -	0·49	0·29	0·90	0·46	2·7	4·74	11·81	September.
Central Provinces -	2·42	1·98	1·96	2·46	7·1	7·63	14·00	June.
Berar - -	2·8	1·9	3·3	2·7	9·4	4·0	14·8	August.
Lower Burma -	0·52	1·48	1·27	0·42	3·1	1·76	10·35	May.
Madras - -	3·5	1·5	4·3	3·4	20·2	5·8	21·9	December.
Bombay - -	0·95	1·19	0·50	1·01	6·3	3·38	5·86	August.

In Bengal there were 229,575 deaths from cholera compared with an average of 137,948 per annum in the decade 1881–90. The death-rate was 3·26 per 1,000 against 2·21 in 1890. The excessive mortality from cholera is attributed by the Sanitary Commissioner to the Ardhodoya Jog bathing festival and the scanty rainfall. The festival is one in which the pilgrims bathe in the waters of the Ganges or its tributaries, and occurs only every 27th or 28th year. In the year under review it took place in the month of February, and the attendance at the different bathing-places was unusually great, owing to the fact that this was supposed to be the last of these festivals to be held at the Ganges. Many of the pilgrims arrived in a very exhausted condition, cholera of a very severe type broke out amongst them, and large numbers died at the places where they congregated on the river, and afterwards on the way to, or at, their homes. In this way the disease is supposed to have been spread all over the province, and communicated to the non-pilgrim population ; but that this theory of the general epidemic is not absolutely accepted is shown by the following extract from a very full report on the subject by the Civil Surgeon of the Purnea District, who says :—" At the same time it is evident that this pilgrimage was not the " sole cause of the epidemic. Though the pilgrimage was immediately followed by

" an outburst of cholera, especially in the three south-eastern *thanas*, and the disease " was imported by returning pilgrims into, I believe, almost every part of the district, " yet in most places it did not at this time attain any serious epidemic form. It was " not until the end of March and the beginning of April, some six weeks after the " pilgrimage, that cholera in an epidemic form was prevalent all over the district. " My personal enquiries show that after the pilgrimage the disease was imported into " many places, but after causing a few cases and deaths, died away for a time. This " occurred in the Purnea town, and in the villages around Motiari and Raniganj, and " also on a larger scale in Manihari itself, where cholera, after being prevalent for a " month, almost died out by the end of the first week in March to recur with much " greater severity in April. I am therefore driven to the conclusion that the epidemic " would equally have occurred in the district this year even had no pilgrimage taken " place. The only difference would probably have been that it would have commenced " six weeks later, and would have caused fewer deaths, about 10 per cent. (roughly) " lower than that which actually took place. The fact that the district has suffered " from repeated epidemics of cholera almost every other year for the last thirty years, " is also in favour of this view."

On the other hand, it is not unreasonable to assume that the seeds of the epidemic were sown by the returning pilgrims and ripened into epidemic proportions later on through favouring seasonal influences. April to July is the period when generally the disease assumes its greatest proportions.

The districts that suffered most severely were Purnea, Jalpaiguri, Rangpur, and Nadia. There was comparatively little cholera in the Chota Nagpur division, but no district throughout the province entirely escaped. These was very little cholera at the ordinary fairs and festivals held in the various parts of the province. As regards the rainfall the Sanitary Commissioner says:—" The total rainfall was 15·8 inches less " than in 1890, and considerably more deficient than that in individual districts. " Coincidently with the deficiency of rain there was an increase of cholera in nearly " every district. There was not sufficient water to flush and replenish the tanks and " wells, which in consequence contained the impure rainfall of the previous year, and " the increased demand of the people for the scanty supply tended further to pollute " the little water there was."

In the port of Calcutta there were 12 admissions and 9 deaths from cholera among the European seamen, whose average strength for the year was 1,426. The ratio of deaths per 1,000 from this cause, 7·01, was less than in any previous year except 1885.

There were 8,486 more deaths from cholera recorded in Assam than in the previous year, and the total exceeded that of any previous year since registration commenced. The increase is mainly due to exceptional prevalence of the disease in the Surma Valley, and especially in the Cachar district. The disease is said to have occurred especially amongst pilgrims returning to the province from the Ardhodoya bathing festivals at Calcutta and Murshidabad, but there was a noticeable increase in its prevalence in the very beginning of the year before the festival commenced. Deaths from cholera were returned in both valleys in every month of the year, but the largest numbers from March to May in the Surma Valley, and from March to July in the Brahmaputra Valley.

The total number of immigrants into the province of Assam who passed through the depôts was 49,206 against 35,798 in the previous year. These figures do not include the larger proportion of the immigrants into the Surma Valley who do not use the depôts. The number despatched from Dhubri up into the Assam Valley was 19,552 against 13,257 in 1890, and there were 30 deaths amongst them while *en route* to the gardens, against 4 in the previous year. From Goalundo 11,776 were despatched into the same valley against 7,629 in 1890, and amongst these there were 12 deaths between Goalundo and Dhubri, and 26 more higher up the river. Besides these there were many deaths at Dhubri, and at the ports of debarkation, and altogether the total casualties on the journey through the Assam Valley amounted to 83 from cholera, 31 from other causes, or a total of 114, against 22, 15, and 37, respectively, in the previous year. Among the coolies who used the depôts on the Surma side, there were 75 deaths against 37 in 1890.

In the North-Western Provinces and Oudh 169,013 deaths were recorded from cholera, double the number in the previous year, and more than in any previous year except 1887. The death-rate per 1,000 from this cause was 3·60 against 1·82 in 1890

and 4·54 in 1887. The districts most severely affected were Sultanpur, Partabgurh, and Rae Bareli, with death-rates of 17·59, 13,03, and 10·61 respectively. There was only one death in the Jalaun district, and only a small number in Jhansi, Bijnour, Dehra, and Agra. The heaviest mortality occurred in June and July as in 1887, but the disease was still prevalent at the end of the year. In the towns of Bilgram and Kairana the death-rate from cholera alone was 35·44 and 32·14 respectively. In the year under report the great assemblage of people at Hurdwar, on the occasion of the Kumbh fair, took place on the 12th of April, but excellent precautionary measures were initiated in the beginning of December previous, as described in the North-Western Provinces Sanitary Report. Measures were taken :—

(1.) to prevent overcrowding;
(2.) to see to surface cleanliness;
(3.) to give notice of, and remove, nuisances;
(4.) to report sanitary offenders;
(5.) to remove promptly and carefully, those sick of infectious diseases;
(6.) to see the proper location of baggage and other animals; and
(7.) to inspect periodically each section of the site of the fair.

The usefulness of these precautions is fully established by the fact that while the fair lasted only three deaths from cholera occurred, and there was no epidemic outburst of the disease, although it was prevalent before the commencement of the fair in the Kumaon hills and the eastern district of the province. This "dispersion of "hundreds of thousands of pilgrims to all parts of India free of epidemic disease," is all the more remarkable as the total number of cholera deaths in 1891, not only in North-Western Provinces and Oudh, but in all the other important provinces of the country, was unusually large as compared with many of the previous years, showing that an epidemic influence was abroad.

In the Punjab cholera was more severe than in the previous year, the total deaths recorded being 10,107 against 3,401. The disease began with two isolated outbreaks in April, but afterwards spread very gradually over the whole province, and only five districts, out of 31, entirely escaped. The first outbreak occurred at a small village in the Hissar district, where two persons, who had just returned from the Hurdwar fair, were first of all attacked, and afterwards four others, who had not left the village or its neighbourhood. The highest mortality from this cause occurred in the Peshawar and Kohat districts, and there were also serious outbreaks in the Ludhiana and Lahore districts. The largest number of deaths was returned in September. The death-rate from cholera is much greater in villages affected by it than in towns, the death-rate in the former being 6·73 against 1·82 in the latter. The Sanitary Commissioner thinks that this may possibly be due to the greater liability to pollution in the case of the village wells, which are, as a rule, less perfectly protected than the wells in town. Of 37,579 towns and villages in the province, only 1,039 returned deaths from cholera.

In the Central Provinces there were 16,525 more deaths from cholera than in 1890. The disease prevailed in all the districts, but with very unequal severity, there being only a few cases in the Sambalpur and Burhanpur districts, while in others, Damoh, Jubbulpore, and Hoshangabad, the death-rate was higher than in any previous year since 1876. In the districts of Murwara, Narsinghpur, Mandla, and Seoni, the incidence was severe and the death-rate from it higher than the average for the whole province. From the memoranda given by the Sanitary Commissioner for the different districts, collected from the reports of the Civil Surgeons, the following account of the behaviour of the disease in the Jubbulpore district would seem to be applicable to the whole province :—"The disease was not influenced by wind direction or humidity. "It appeared and disappeared capriciously. The insanitary conditions of localities "and their defective water-supply were not in themselves sufficient to cause its "incidence; and villages with bad, or even worse, local conditions were in many "instances left untouched. But when once the disease appeared, its persistence or "severity, or both, seemed to depend on one or other of these factors. Villages "depending on tanks or rivers, in which water is subject to pollution, suffered "more than those drawing from wells. Instances were not infrequent where, "coincident with improved sanitary arrangements, especially the protection of "the water-source from contamination, a marked decrease in the disease was "noticed."

In many districts the first persons attacked are said to have been pilgrims or other persons returning from fairs or other large assemblages of people, and the inference is

drawn that these persons introduced the disease, but in many places no suspicion of introduction by human intercourse could be entertained. In some places, such as the town of Burhanpur, cholera was notably absent, although prevalent in all the villages round about it. The town of Nagpur was affected rather severely, deaths from cholera being reported from all but two of the 24 circles into which it is divided, and also from the central jail which is situated near the town.

In Berar there were were 7,958 deaths registered from cholera, compared with 847 in the previous year. The death-rate from this disease was 2·8 per 1,000. The mortality was not so great as in 1887 and 1889. It was prevalent in every month, except April and May, and attained its maximum in August and September. All districts suffered, but especially Buldana and Basim. The disease was reported in 97 out of 121 circles of registration, and in 532 out of 5,655 villages.

In the Bombay Presidency cholera was more severe than in the previous year, there being 14,591 more recorded deaths, but it was rather less widely distributed. In Sind only one Collectorate, Shikarpur, was affected, and then only slightly; and in Bombay proper the Collectorates of Surat and Kaira entirely escaped; there was only one death in Broach; and only a few deaths in Ahmedabad, the Panch Mahals and Kanara. The death-rate from cholera for the Presidency, calculated on the 1891 census figures, was 0·95, but in the Collectorate of Bijapur the rate was 6·35 and in Sholapur 3·25. The mortality was also high in the Ahmednagar, Poona, Khandesh, and Nasik Collectorates. The disease was present throughout the year, but was at a minimum in March, and reached its maximum in August. Out of 222 rural circles, 116 were more or less affected; and out of 63 town circles, 29. Of the 25,206 villages in the Presidency, 1,600, or 6·3 per cent., were affected. In the Bijapur Collectorate, 39 per cent. of the villages suffered; in Sholapur, 30 per cent. In the city of Bombay there were 146 deaths from cholera against 100 in 1890. On the 11th of September cholera broke out simultaneously in two men-of-war lying in the harbour, and there were in all 38 cases and 19 deaths amongst the crews before the disease ceased. No definite cause for the outbreak could be traced.

In the Madras Presidency cholera prevailed with greater severity than in any year since 1877. The total of the deaths recorded under this head amounted to 98,773, or at the rate of 3·5 per 1,000. The disease was present throughout the whole year, but increased in severity in July and August, and again in November and December. The greatest number of deaths in any one month was recorded in December. The disease was comparatively slight in the districts of Vizagapatam, Ganjam, and South Kanara, and severe in South Arcot, Madura, Bellary, Anantapur, Chingleput, Cuddapah, and Coimbatore. Out of 44,449 villages, cholera was reported from 8,975, or 20·2 per cent. Of the 77 towns, 65 returned deaths from cholera. The death-rate from cholera exceeded 10 per 1,000 in the following towns, viz., Palni, Nellore, Adoni, Anantapur, Chidambaram, Arcot, and Dindigul. It equalled 5·1 in the municipalities as a whole, and 3·4 in the districts, excluding the municipal town. In 34 towns the death-rates exceeded the district ratios; in 14 they were less. The Sanitary Commissioner remarks:—"The reports of the year do not cast any new light upon the "etiology of the disease, but it may be safely assumed that however obscure the "origin and behaviour of the epidemic may be, yet its spread in a place depends "largely on the sanitary conditions present and the very inferior water supply. In "consequence of deficient rainfall in 1891, many of the tanks and wells, which were "drinking-water supplies, became dry, and people had to use any water they could "obtain. Further, owing to the drought, the water in the tanks and wells was much "reduced in quantity, and therefore had a much larger percentage of dissolved and "suspended impurities."

In Lower Burma cholera was more severe than in the previous year, 2,400 deaths being recorded against 1,076, and 188 circles of registration returning deaths from it against 145 in 1890. The disease prevailed throughout the year, but declined somewhat in June and July. The Arakan division, as usual, escaped almost entirely. Deaths from cholera were returned in 547 out of a total of 17,807 villages.

In Rajputana 2,946 deaths were recorded from cholera against 2,746 in 1890. The disease began in Marwar on the 3rd of May, attained its maximum in August, and ceased in November, except in Bikanir, where it continued throughout November and

December and on into the next year. The epidemic was both severe and prolonged, the Ajmere division and 11 States being invaded by it. No cases were reported from the States of Bhurtpore, Kerowli, Tonk, Ulwar, Shahpura, Jeysulmere, and Dungarpur. The largest number of cases and the heaviest mortality occurred in the States of Jhallawar and Marwar, while in the previous year Jhallawar had escaped entirely, and only one case had been reported from Marwar.

Cholera was more or less prevalent in different parts of Biluchistan from the end of July until the close of the year. A few cases had occurred at Sibi in the last days of July, but the first severe outbreak commenced at Mudgorge on the 4th of August. Some 2,000 workmen were encamped on the railway works at this place, amongst whom in the first three days there were about 50 seizures and 25 deaths, and before the end of the outbreak, 200 seizures and 100 deaths, although many of the coolies had fled from the place. Many of the fugitives died on the roads, and at Bostan, in the quarantine camp and neighbouring villages, there were 118 seizures and 95 deaths. At Dirghi, where there was a gang of 500 coolies, there were 77 seizures and 56 deaths; at Hurnai and Lunari and their neighbourhood, there were 26 seizures and 18 deaths; at Fuller's Camp, 18 and 14 respectively. In some places on the line, where there was a good water supply, such as Sharigh, Kach, and Khost, there was no cholera except among travellers arriving from other places. In August and September severe outbreaks occurred in some villages, and in a nomad encampment, in the Quetta district, but in the town of Quetta there were only 26 cases, and it is remarked that in every one of these the patient was shown to have used water from wells, or open streams, instead of the pure pipe-water laid on to the town. Late in August and in September the disease was severe in some of the villages of the Pishin district, and in October and November in the Thal Chotiali Agency. In the Zhob Valley also many places suffered, and towards the end of the year the disease appeared among the coolies collected in the lower Bolan Pass for the reconstruction of the railway.

The following is the usual summary of the cholera reports received from regiments and jails:—

Among the European troops no particular exposure or fatigue is mentioned in any of the 36 reports received, as having preceded the attack in the first patient. In 22 instances premonitory diarrhœa is said to have been noticed, and in 7 the attack was preceded by over-indulgence in fruit, or tinned fish, or ginger-pop. In the 75 reports from Native regiments, the first case is said to have been suffering from unusual fatigue in 14; in four cases attendance at some form of festivity preceded the attack; and in 21 the patient had only been a few days at most in the station where he was attacked. Out of 51 first cases in jails, 17 were patients in hospitals at the time of the attack, and 12 were new arrivals in the jail.

Among European troops diarrhœa appears to have been noticeably prevalent during five outbreaks of cholera. Among Native troops it was prevalent in 25 instances, and in the case of jails in 10.

In the stations at which cholera occurred there were in all 870 buildings occupied by European troops, and patients were attacked with the disease in 135 of them. In the case of Native troops 246 buildings, out of a total of 17,755, yielded cases of cholera; and in jails 151 out of a total of 775.

As usual, every variety of weather is reported from the different stations as prevalent during the outbreak, but owing to the late monsoon an unusually large number report hot and dry weather.

Among European troops no communication could be traced between the first case and any case of cholera outside the regiment in 26 instances. In the 10 remaining cases the disease is said to have been imported, which means that the first patient attacked had been recently to some place where cholera was known or believed to have been prevalent at the time. In the reports from Native regiments, it is said, in 42 instances that there was no communication between the first case and cholera elsewhere; in 33 the disease is said to have been imported; while in two instances contact with cholera patients is mentioned. In the case of jails no communication could be traced in 34, and the disease was possibly imported in 17.

Attendants attacked.—The following statement shows the number and percentage of attendants on cholera cases who were themselves attacked with the disease:—

Communities.	Number of Cases of Cholera treated.	Medical Officers, Hospital Assistants, and other Attendants on Cholera Cases.		Percentage of Attendants attacked.
		Number.	Number of these attacked.	
European troops	374	628	4	0·64
Native troops	755	1,863	35	1·88
Jails	344	572	17	2·97
Total	1,473	3,063	56	1·83

Sanitary defects in connexion with cholera epidemics.—In the returns from European troops sanitary defects are noted in five instances. At Cawnpore the drainage of the city and bazaar is said to be very bad, the bazaar overcrowded, and its conservancy arrangements not sufficient to keep the latrines clean and to carry away the filth. At Quetta the first case "occurred in a soldier employed as a clerk, and living in very "bad sanitary surroundings," and the disease afterwards attacked the cooks who were "exposed to insanitary influences in the barrack kitchens."

At Chickalda the accommodation in the mud huts was insufficient, and the men's clothes and bedding were constantly damp. At Pagan the accommodation on board the steamer was insufficient, and at Pakkoku the town was not clean, ordure lying about in all directions, and there were many smells in consequence. Among the Native troops the water supply is frequently complained of, particularly by regiments on the line of march or on the Manipur Expedition, but sometimes in cantonments. Thus at Goalundo, when the 40th Bengal Infantry was marching through, the report says, "the water of river swarmed with excreta, and was drunk by the men"; and similar statements are made by many of the regiments on the routes to Manipur. In the report from the 27th Punjab Infantry at Kohat, we are told that the water supply was contaminated by a sewer bursting into it, and the other reports from Kohat say that the men have access to open water-channels which are much polluted. In a few reports defective drainage is mentioned, and in some cases overcrowding. In the reports from jails sanitary defects are rarely mentioned. At Gauhati the pure water supply had broken down for a day, and in a few others the ordinary water supply is said to be defective, while in others the drainage is imperfect.

Cholera camps.—The effect of moving into cholera camp appears to have been generally satisfactory as regards both the speedy cessation of the epidemic, and the general health of the troops or prisoners. British troops went into camp from 16 cantonments in a total of 96 distinct parties. In 81 of these parties there were no more cases of cholera, and in the remaining 15 a total of 58 cases. Twenty-nine Native regiments went into camp in 52 parties, of which 28 had no further cases of cholera, while in 24 there was a total of 237 cases. Amongst these are included regiments already on the march when the disease broke out, and in some cases, especially on the road to Manipur, the regiment seems to have merely marched from one cholera-affected camp to another, and not, strictly speaking, to have gone into a cholera camp at all. Nineteen jails went into camp in 49 parties, of which 30 remained free from further attacks of cholera, and the remaining 19 had a total of 61 cases.

Cholera in the Manipur Expedition.—There was a severe outbreak of cholera amongst the troops engaged in the Manipur Expedition. The Sanitary Commissioner says, that cholera is always prevalent during April in the neighbourhood of Fenchuganj, and along the route between that place and Silchar, along which one column of the troops had to pass. The 3rd Bengal Infantry left Fenchuganj on the 3rd of April, and was attacked with cholera on the 5th. The boats were overcrowded; the food was not of the best description; and the river water, which was drunk by the men, was polluted with cholera corpses. There were in all 36 cases of cholera, and 21 deaths in this regiment, but on the 24th of April it was allowed to march into Silchar, having been free from cholera for ten days, and no more cases occurred in it. This was the only regiment attacked with cholera below Silchar. On the 15th of April the 1-2nd Goorkhas left Silchar for Manipur, cholera being known to be prevalent on the road in front of them, and on the same day a case of cholera occurred in the regiment, but it was a solitary case and recovered. Between the 21st and the 23rd of April,

inclusive, there were 53 cases and 23 deaths in the regiment, and again subsequently at Manipur, between the 8th and the 28th of May, there were 4 more cases and 2 deaths. The 43rd Goorkha Rifles were attacked on the 27th of April higher up on the road to Manipur, and two days after they had been joined by the 1–2nd Goorkhas, from which the Sanitary Commissioner seems inclined to infer that there was infection carried between the two regiments. Other detachments of the same column were afterwards attacked, and the disease subsequently broke out amongst the troops at Manipur itself, including the column that had come from Burma.

Small-pox.

The total number of deaths from small-pox recorded amongst the general population in India as a whole, was 98,831 against 119,854 in the previous year. There was, nevertheless, an increase in the deaths from this cause in Bengal, Assam, the Madras Presidency, Mysore and Coorg, as may be seen from the following table:—

Statement showing the Deaths from Small-pox registered in the different Provinces, by months, during the year 1891.

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratio of Deaths per 1,000 of Population. 1891.	1890.
Bengal - -	1,037	1,538	2,507	1,926	1,967	1,826	1,335	959	557	471	714	1,356	16,193	0·23	·19
Assam - - -	167	236	303	393	412	261	160	67	118	55	86	163	2,361	0·47	·31
North - Western Provinces and Oudh.	1,552	2,128	3,273	4,278	5,235	4,389	2,931	1,267	498	224	198	382	26,355	0·56	1·26
Punjab - -	215	203	204	219	403	379	357	234	184	160	266	602	3,426	0·17	·47
Central Provinces	68	71	81	112	98	64	61	67	42	36	30	18	748	0·08	·26
Berar - - -	3	2	3	4	8	2	1	1	—	1	2	7	34	·01	·1
Lower Burma -	136	173	230	231	180	153	76	71	24	31	10	11	1,326	·29	1·01
Madras Presidency	3,648	4,502	4,330	4,027	3,691	2,930	3,025	2,804	2,570	2,771	2,672	4,352	41,322	1·4	1·0
Bombay - -	133	203	220	224	191	134	89	63	40	42	43	109	1,491	0·08	·17
Mysore - -	456	427	368	393	454	518	525	423	355	334	297	549	5,099	1·05	·86
Coorg - - -	24	41	29	39	37	41	40	69	23	14	35	84	476	2·75	·19
Total -	7,439	9,524	11,548	11,846	12,676	10,697	8,600	6,025	4,411	4,139	4,353	7,573	98,831	—	—

In Bengal there were 16,193 deaths from small-pox, or 3,574 in excess of the previous year, and 5,037 in excess of the average of the ten years 1881–90. The death-rate per 1,000, of the population was also higher than that of the previous year, or of the decade, the figures being ·23, ·19, and ·15 respectively. The districts which suffered most severely were Cuttack, Midnapore, Lohardaga, and Puri, in all of which the duty of inspecting the work of the vaccinators has been imperfectly performed. A new system, under which the Vaccination Department has been entirely reorganised, and Civil Surgeons made responsible for the vaccination in their districts, has now been introduced, and is expected to yield better results.

In Assam there were 960 more deaths recorded from small-pox than in 1890, the increase being mainly due to the excessive mortality in the Cachar, Kamrup, and Sylhet districts. In Cachar it is said inoculation greatly increased and vaccination was defective. In Kamrup vaccination has been greatly neglected. There were 32 deaths from small-pox in *sadr* towns against only 1 in the previous year.

In the North-Western Provinces and Oudh there were only 26,355 deaths from small-pox against 55,394 in 1890, and the provincial death-rate was 0·56. High death-rates from this cause were returned from the districts of Gorakhpur (3·71), Azamgarh (2·22) and Ghazipur (1·56). The town of Barhaj shows the high death-rate of 14·97 from smallpox, but in 39 of the towns, with a population of over 10,000, there were no deaths from this disease.

In the Punjab the number of the recorded deaths from small-pox (3,426) is the lowest in any year since registration was commenced. The registered death-rate per 1,000 was 0·17, the average for the previous five years being 0·59. Nevertheless there was a death-rate from this disease of 0·68 in the Bannu district, where vaccination is much opposed, and the disease is supposed to have been introduced by inoculators. The disease also prevailed in the Peshawur district, especially in one sub-division, Mardan, in which it was severely epidemic in December. There was also a relatively high mortality in the Kurnal and Rohtak districts, and towards the end of the year there were epidemics in the towns of Beri and Jhajjar, both places where

vaccination is much opposed. A severe epidemic also occurred in the town of Ludhiana in December.

In the Central Provinces small-pox was less prevalent than in any of the past 18 years, and only 748 deaths were recorded from it against 2,265 in the previous year. It was, however, slightly prevalent in almost all districts.

In Berar there were only 34 deaths from small-pox in 1891 against 324 in the previous year. The disease occurred in five of the six districts. Nine of the deaths were in infants under one year of age, and 19 children between 1 and 12.

In the Bombay Presidency there were only 1,491 deaths from small-pox, which is about half the number in the previous year and less than in any year since 1886. Of the total deaths, 410 occurred in children of less than one year old, and 748 in children over one year, but less than 12. The disease reached its maximum intensity in April. Small-pox was prevalent throughout the year in the city of Bombay, and caused 118 deaths against 151 in 1890.

In Madras the mortality from small-pox was higher than in any of the previous six years. Of the total mortality from this cause, 54·1 per cent. occurred among children of less than 12 years of age. Compared with the previous year, it is said that a very small proportion of infants perished from this cause. The highest death-rates from small-pox were returned from the districts of Kistna, Malabar, South Arcot, and Madura; the lowest from Madras, Vizagpatam, Nellore, and especially South Canara and Ganjam. Deaths were registered from small-pox in 44 of the 55 municipal towns. The town of Calicut heads the list with a death-rate from this cause of 20·4 per 1,000, and the Sanitary Commissioner says that in this town vaccination is carried on in a very unsatisfactory manner.

Small-pox was epidemic in Coorg throughout the year, 476 deaths from this disease being registered compared with 34 in 1890. The small-pox death-rate was 2·75. Deaths were registered in 23 out of 27 circles.

There were 1,226 deaths recorded from small-pox in Lower Burma against 3,693 in 1890. Of the total deaths, 199 occurred in infants under one year, and 802 in children between the ages of 1 and 12. The Pegu and Irrawaddy divisions suffered most severely, as was the case in the previous year, while the Arakan division almost entirely escaped. The highest death-rates from small-pox were returned by the districts of Pegu (·91), Henzada (·73), Hanthawaddy and Thongwa (·54), the mean for the whole province being ·29.

Fevers.

The total number of deaths from fevers recorded amongst the general population in India as a whole, was considerably less than in the previous year, viz., 3,817,683 against 4,105,890. The statement below and the notes which follow, give the particulars for the different provinces. There was an increase in the number of fever deaths returned from Bengal, Assam, Berar, Bombay, and Lower Burma. It is probable that influenza contributed to the mortality under this heading in all the provinces, but no definite particulars are given concerning this disease in any of the sanitary reports.

Statement showing the Deaths from Fevers registered in the different Provinces, by months, during the year 1891.

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratio of Deaths per 1,000 of Population.	
														1891.	1890.
Bengal	99,607	95,436	110,805	92,479	77,360	94,636	77,785	99,031	114,019	117,059	171,864	183,314	1,333,395	18·94	17·54
Assam	5,771	5,219	5,023	5,308	6,661	7,277	7,461	6,767	6,536	6,517	6,823	6,602	75,965	15·13	16·52
North-Western Provinces and Oudh.	94,038	81,781	65,657	67,917	76,687	76,243	79,102	70,036	81,955	106,888	115,973	116,782	1,033,059	22·02	28·21
Punjab	39,262	31,856	26,795	24,070	33,112	38,569	55,110	31,989	33,235	41,744	42,776	43,736	442,254	21·52	36·75
Central Provinces	13,605	12,331	11,940	13,077	15,404	15,950	12,751	14,923	18,339	23,091	21,880	17,259	190,550	21·61	21·76
Berar	3,304	2,526	2,615	3,305	2,962	3,556	3,040	4,537	6,879	7,083	5,027	4,016	49,850	1 75	18·2
Lower Burma	3,184	2,412	2,350	2,407	2,260	2,418	3,196	3,965	3,424	3,288	3,250	3,504	35,658	7·76	8·82
Madras Presidency	22,733	18,685	16,753	17,071	17,679	18,998	20,428	21,317	21,408	21,348	25,298	27,311	247,029	8·6	9·2
Bombay Presidency	29,388	25,833	26,298	30,120	28,559	25,628	25,769	29,304	31,464	31,409	34,187	50,954	368,913	19·60	20·96
Mysore	3,543	3,125	26,24	3,093	3,064	3,236	3,546	3,422	3,131	3,145	3,108	3,270	38,307	7·91	11·21
Coorg	215	193	142	175	245	303	307	261	210	230	234	188	2,703	15·61	21·52
Total	314,650	279,397	271,002	259,022	264,993	286,814	288,495	285,552	320,600	361,802	428,420	456,936	3,817,683		

In Bengal there was a still further increase in the mortality from fevers; 1,333,395 deaths, representing a death-rate of 18·94 per 1,000 of the population, being recorded under this heading, against 1,155,569 deaths, or 17·54 per 1,000 in the previous year. The excessive mortality from fevers, which last year was attributed to abnormal rainfall, must this year, the Sanitary Commissioner thinks, have been due to deficient rainfall—an apparent paradox which he explains as follows:—

"The explanation is that in the present defective drainage, and consequently water-logged condition of Bengal, there is not sufficient exit in years of heavy rainfall for the excess water which stagnates in the soil, and it is well known that stagnant moisture is a cause of malarial fevers. On the other hand, in years of deficient rainfall, such as the year under report, in consequence of the failure of rivers to inundate areas in the interior of the country, the drinking-water sources of the larger proportion of the population are not replenished, and tank and other vegetation begins early to decompose and fill the air with poisonous effluvia. Surface impurities, moreover, in years of deficient rainfall are not washed away, and in their process of decomposition add to the contamination of the atmosphere. The impoverished condition of the people also, owing to the failure of crops and high prices of food, in other words, a lowered standard of living, had much to do with the febrile unhealthiness of the year under report. Many hundred of persons are reported to have suffered a great deal of fatigue, privation, and exposure endeavouring to irrigate their lands from tanks, *khals*, and any pool of water they could find, in consequence of the deficiency of rain, which was less during the year under report than in the previous year in 37 out of the 45 districts. It is therefore not to be wondered at that their exhausted and impoverished systems succumbed to attacks of fever and chill, especially during the months of November and December, in which the highest mortality occurred. Until drainage, a better water-supply, and proper conservancy arrangements are initiated, and the masses taught to appreciate and take an interest in them, it is hopeless to expect an appreciable reduction of the fever mortality of these low-lying provinces."

From the reports of the Civil Surgeons of the districts it would appear that some portion of the mortality recorded under "fevers" was due to an epidemic of influenza, but no details are given. The mortality amongst children seems to have been unusually great, and to have attracted general attention in some districts.

There has again been an increase in the deaths from diseases classed as "Fevers" in Assam, the slight fall in the death-rate being due merely to the use of the figures of the new census. The increase was, however, mainly confined to the districts of the Surma Valley, especially Sylhet. The rainfall in this district was less by 66 inches than in the previous year, and the Civil Surgeon thinks that the increase of fevers may be the result of a partially submerged country being more unhealthy than one that is completely so. There was also an increase of mortality from fevers, and a diminished rainfall in the Nowgong district on the Brahmaputra side.

Of the total deaths from fevers (75,965) in this province, 9,937 were the result of the disease known as *kala-azar*. The Sanitary Commissioner, in a long and interesting note on this disease, expresses the opinion that Surgeon-Captain Giles has arrived at a correct view of the nature of this disease, viz., that it is a form of anchylostomiasis, but he thinks—and this opinion is shared by many of the civil surgeons who have had much experience in the province—that the malarious element which makes the difference between *kala-azar* and anchylostomiasis has been too much overlooked. He believes that *kala-azar* has been hitherto, and will be in the future, confined to the malarial tracts of the *terai*, its place being taken in the upper districts of the province by beri-beri, which is also the result of anchylostomiasis, but is free from the malarial element (shown by enlarged spleen and liver, pigmentation, &c.), which distinguishes *kala-azar*.

There were 211,267 fewer deaths from fevers in the North-Western Provinces and Oudh than in 1890, but, as in that year, they represented 70 per cent. of the total deaths in the province. The diminished number is attributed to the absence or diminished prevalence of influenza, and the comparative healthiness of the people in the autumn months. The provincial death-rate from fevers was 22·02, but high ratios were returned from the *terai* (38·82), Fatehpur (31·45), Farukhabad (31·39), Saharanpur (31·15), and Muzaffarnagar (30·44). The percentage of total deaths returned under this heading ranged from 95 in the Meerut district to 28 in Partabgarh. In the small towns of Sahtawar and Sardhana the death-rates from fevers were 54·43 and 51·08, respectively, and many of the large towns returned high ratios, as, for instance, Cawnpur (39·26), Farukhabad (34·0), Jaunpur (33·82), Fyzabad (31·85), Lucknow

(30·33). At the town of Hapur 98 per cent. of the total deaths were attributed to fevers.

In the Punjab the fever death-rate was very much lower than in the previous year, when it was exceptionally high, but approximated very closely to the average of the previous five years. The highest mortality from fever did not occur, as has always hitherto been the case, in the month of September, October, or November, but in July. The Sanitary Commissioner explains this by supposing that, owing to the low rainfall, malarial fevers were comparatively in abeyance, but that their place was taken by other forms of fever, especially typhus and relapsing fever, which were unusually prevalent. There were two widespread and severe epidemics of influenza, one of which culminated in July, and another in December. Fever of a continued type, in some places returned as typhus, in others as relapsing fever, prevailed also in the frontier districts, especially where the villagers live in ill-ventilated and overcrowded dwellings.

The number of deaths from fevers recorded in the Central Provinces was slightly less than in 1890, and there were fewer cases of fever treated in all the dispensaries. A smaller death-rate under this heading was returned in 10 of the 20 districts.

In Berar there were 49,850 deaths recorded from fevers compared with 47,894 in 1890. The death-rate was 17·5, and ranged in the districts from 21·3 in Wun to 11·9 in Basim. Influenza, which prevailed in 1890, was absent in the year under report.

The total deaths from fevers in the Bombay Presidency amounted to 368,913 compared with 344,897 in 1890, and 296,021, the mean of the previous 10 years. The provincial death-rate for the year under this heading was 19·6, and the maximum rate in any collectorate was 37·3 in Broach. Very high death-rates from fevers were also returned from the following collectorates, viz., Ahmedabad, 31·44; Khandesh, 27·21; Nasik, 25·95; Surat, 25·35; Kaira, 24·17; Ahmednagar, 21·75. The maximum monthly total of deaths from fever occurred in December, the minimum in June. A certain proportion of the mortality recorded under this head may be attributed to influenza.

In Madras the mortality from fevers was higher than in any of the preceding 10 years, with the exception of 1890. In all but six districts the rate was lower than in the previous year. The mortality was, as usual, highest in the Kurnool district, and was high in the districts of Madras, Nilgiris, Cuddapah, and Vizagapatam, Ganjam, and Godavari. The mortality was lowest in Tanjore, and comparatively low in Tinnevelly and Trichinopoly. The death-rate in the rural circles of the Presidency was 8·8, or 2·4 greater than the municipal rate (6·4). The Sanitary Commissioner thinks that it is possible that the lower rate of fever mortality in towns is partly due to the indiscriminate classification of all diseases with inflammatory systems as fever in the more rural or less educated tracts of the country.

The incidence of fevers was comparatively light in the province of Coorg, the death-rate from this cause as recorded being 15·61 per 1,000 of population against 21·52 in the previous year. This is probably to be accounted for by the absence of influenza.

In Lower Burma there were 35,658 deaths registered from fevers, which exceeds the number in the previous year by 3,426, and is more than in any of the preceding 19 years, except 1888. The death-rate for the province under this heading was 7·76 per 1,000, and was high in the Akyab (11·84), Prome (11·72), and Sandoway (10·79) districts. In towns the death-rate from fevers ranged from 29·85 at Pantanaw to 1·61 at Shwedaung. The heaviest mortality occurred in August and the four following months.

The Agency Surgeon, Biluchistan, in his annual report for the year 1891, says: "On "the whole, malarial fevers were less prevalent than in the previous year, and there is "nothing of interest to record regarding them. A continued or remittent form "of fever lasting for from 20 to 25 days, accompanied by constipation, and occasionally "also accompanied by a general papular rash disappearing on pressure, was frequently "observed among patients admitted to the Civil Hospital, Quetta, during the summer. "This fever was fatal in many cases (about 25), and seemed to be contagious. "Another very severe and fatal form of fever was also observed in certain cases, "characterised by relapses after from seven to 30 days. This fever was accompanied "by much nervous excitement and persistently high temperatures. I have known "varieties of contagious fevers in Biluchistan for the last 12 years. In one variety "pneumonia was the prominent feature. These fevers seem to cling for years to old

" buildings, and are associated with hospitals and old barracks and huts, and appear " among troops, and workmen, and villagers from time to time, even when food is " good and plentiful." From this it would appear that typhus and relapsing fevers, or diseases very much resembling them, are endemic in Biluchistan.

Dysentery and diarrhœa.

The deaths recorded from " dysentery and diarrhœa " amongst the general population in India as a whole, amounted to a total of 243,456 against 229,588 in the previous year. The most noticeable increase has occurred in Madras, Berar, and the Central provinces.

Statement showing the deaths from Dysentery and Diarrhœa registered in the different provinces, by months, during the year 1891.

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratios of Deaths per 1,000 of Population.	
														1891.	1890.
Bengal	3,910	3,611	3,989	3,079	2,727	3,332	3,272	3,668	3,641	3,411	4,011	4,532	43,183	0·61	·65
Assam	919	814	883	1,040	1,691	1,501	1,225	1,091	1,262	1,315	1,494	1,183	14,418	2·87	2·87
North-Western Provinces and Oudh.	3,894	2,973	2,546	3,238	4,140	4,226	4,518	4,615	4,931	5,392	5,042	4,571	49,586	1·06	1·22
Punjab	778	576	488	527	1,147	1,114	979	960	1,377	1,662	1,443	1,101	12,152	0·59	0·91
Central Provinces	1,082	944	1,264	1,611	1,654	1,755	1,862	2,195	2,555	2,665	1,913	1,439	20,889	2·37	2·01
Berar	833	540	645	851	1,014	940	1,405	3,870	5,154	3,883	1,893	1,199	22,007	7·7	5·1
Lower Burma	204	165	196	257	344	504	654	653	414	336	216	219	4,162	·91	·84
Madras Presidency	2,314	1,926	1,910	1,972	1,745	2,085	2,756	3,705	3,312	2,845	4,176	5,477	34,223	1·2	0·9
Bombay	2,526	2,181	2,202	2,491	2,957	3,042	3,651	4,776	4,875	3,653	2,699	2,675	37,728	2·00	2·19
Mysore	441	383	319	395	414	393	495	491	460	416	372	377	4,936	1·02	1·09
Coorg	13	12	7	12	25	18	21	12	10	13	13	15	172	0·99	1·30
Total	16,364	14,105	14,449	15,454	17,858	18,910	20,838	25,836	27,991	25,591	23,272	22,788	243,456		

The mortality from dysentery and diarrhœa in Bengal was almost exactly the same as in the previous year, and considerably below the average of the previous five years.

In Assam there were more deaths from dysentery and diarrhœa than in the previous year, and the increase is especially noticeable in the districts of the Surma Valley. The Sanitary Commissioner thinks that many deaths from both kala-azar and cholera are returned under this heading.

In the North-Western Provinces and Oudh there were 49,586 deaths recorded from dysentery and diarrhœa against 53,604 in 1890, and the death-rate was 1·06. High death-rates were returned from Garhwal (7·92), Kumaun (5·51), Lalitpur (4·78), and Dehra Dun (4·05), and in the towns of Kalpi (12·9) and Chandpur (10·44).

In the Punjab there were 12,152 deaths from dysentery and diarrhœa against 17,163 in the previous year. The Sanitary Commissioner attributes the lessened mortality under this heading to the small amount of the rainfall during the autumn months and the moderate prevalence of malarial fevers.

The death-rate from dysentery and diarrhœa was somewhat higher in the Central Provinces than that in the previous year. The Sanitary Commissioner thinks that cases of cholera are probably included under this heading in years when this disease is prevalent.

In Berar the deaths registered from dysentery and diarrhœa amounted to 22,007, giving a death-rate of 7·7 per 1,000, compared with 13,328, and a death-rate of 5·1, in the previous year. The death-rate ranged from 13·3 in the Ellichpur district to 2·1 in Wun.

The deaths ascribed to dysentery and diarrhœa in the Bombay Presidency amounted to 37,728 against 36,037 in the previous year, and 41,789, the mean of the previous five years. The provincial death-rate from these causes equalled 2·0 per 1,000, and in the Collectorates the rate was high in Belgaum, 5·69; Dharwar, 4·82; Bijapur, 4·71; Khandesh, 4·22; and Nasik, 4·18. The maximum mortality occurred in September and the minimum in February.

In Madras the death-rate (1·2) was higher than in any of the previous years since 1882. Among the districts, Madras takes the lead with a death-rate from these

diseases of 11·5 per 1,000, and Chingleput stands next with a rate of 4·2. The lowest rates were returned from Cuddapah, Ganjam, Godavari, Nellore, and Vizagapatam. The rate for districts as a whole equalled 1·1, excluding the municipalities, for which the rate was 3·4. The highest rate in municipal towns occurred at Bezvada (11·9).

In Lower Burma 4,162 deaths were registered from dysentery and diarrhœa in 1891 against 3,067 in 1890. This is more than in any year since 1878, except 1888, and gives a death-rate of ·91. High death-rates from these causes were returned from the districts of Sandoway (2·18), Hanthawaddy (2·07), and Toungoo (2·00). The mortality was highest in June, July, and August.

Injuries.

The deaths recorded from injuries increased from 87,264 in 1890 to 88,933 in 1891. The only noticeable increase was in the North-Western and the Central Provinces.

The deaths from injuries increased from 87,264 in 1890 to 88,933 in 1891. There was an increase under each of the headings, suicide, wounds, and accidents, and snake bite, compared with the previous year.

All other causes.

The balance, or deaths from all other causes, increased from 1,086,586 in 1890 to 1,109,512 in 1891.

Vaccination.

The total number of successful operations performed by the Vaccination Departments of all the provinces together was 5,712,508, compared with 5,812,829 in the previous year. There was a falling off in the number of successful operations in four provinces, viz., Bengal, the Punjab, Lower Burma, and Bombay; and the average number of operations of all kinds performed by each vaccinator was less in Bengal, the Punjab, the Central Provinces, and Lower Burma. The ratio of successful operations per 1,000 of the population ranged from 54·31 in Coorg to 14·37 in Upper Burma. In addition to the above, 170,175 successful operations were performed by the dispensary staff, against 161,769 in the previous year.

In Bengal there were 92 more vaccinators employed than in the previous year, but there were 198,079 fewer operations performed, or a falling off by 107 of the average number of operations per man. The decrease in work occurred in every circle except one, and is attributed to various causes, such as the unusual unhealthiness and prevalence of malarious fevers and influenza; the poverty of the villagers, caused by scarcity, and preventing them from paying the vaccinators' fees; the growing opposition of the people to vaccination. The depôt for the preparation of animal lymph in Calcutta has been improved, and an additional one started in Darjeeling. From these two depôts sufficient lymph is obtained for the requirements of the province, and the introduction of lymph each year from England will now be discontinued. Much success has attended the practice of preserving lymph with lanoline, but the use of glycerine in this connexion is pronounced to be a failure, which is the more curious as it is reported to succeed well in Assam. As usual, however, the principal part of the work was carried on by means of human lymph, bovine lymph being only used to start operations in each district. The Vaccination Department of this province has now been reorganised, and under the new scheme the executive supervision of the work of vaccination has been transferred to the district civil surgeons, the former deputy superintendents and three of the six superintendents being abolished.

In Assam there were 205 vaccinators employed, against 194 in the previous year, and they performed 180,211 operations, or an increase of 16,930. In addition to these, the civil surgeons and the staff of the dispensaries performed 16,936 operations against 10,466 in 1890–91. Of the different classes of vaccinators included in the above-mentioned 205, the Local Board vaccinators and the licensed vaccinators show a satisfactory increase in their work, but the operations performed by the Government vaccinators proper fell off by 8,109 cases, which is attributed to the unsatisfactory work done in the Kamrup district; to the opposition of the villagers in certain places where vaccination is not compulsory; to the prevalence of inoculation in parts of the Sylhet district; and to the necessary placing of medical subordinates in temporary charge of certain districts instead of civil surgeons. There was a falling off of 4,217 cases in the Kamrup district, of 1,869 in the Darrang district, and 123 in Sylhet. In all other districts the work increased. Success is claimed by the vaccinators in 94·2 per cent. of all primary vaccinations, but out of 12,432 cases inspected by civil

surgeons only 86·85 per cent. were found to have been successful. There was a great falling off in the quantity of work done in tea gardens, and success was attained in only 82·76 per cent. of the primary cases, which low figure is said to be due in many cases to the use of inferior lymph which had been too long preserved. Compulsory vaccination in the nine municipalities and stations where it is enforced shows an increase from 1,891 cases in 1890-91 to 2,191 in the year under review. There were 323 notices issued and eight prosecutions for neglect of the provisions of the Act in these municipalities. An animal vaccination depôt has been maintained at Shillong and has proved a great success. The total number of tubes distributed amounted to 223,185 as compared with 112,475 in 1890-91. Lymph preserved in glycerine is said to have proved most satisfactory, and "leaves nothing to be desired," success being attained with it in at least 90 per cent. of the cases in which it was used. Experiments were also made with lymph preserved in lanoline, but the results have not yet been published.

In the North-Western Provinces and Oudh 19 additional vaccinators were appointed during the year to the vaccination staff. There was an increase of 70,812 in the total, and of 41,373 in the successful, operations. The average number of persons vaccinated by each vaccinator increased from 1,317 to 1,377, while the cost of each successful operation fell from two annas and six pies to two annas and three pies. There were 7,781 fewer successful primary vaccinations among infants, which falling off is attributed by the Sanitary Commissioner to the small number of births, the proportion of infants vaccinated being actually greater than in the previous year. Animal lymph operations were carried on in nine towns only, and by far the greater part of the work in these provinces appears to be carried on with human lymph.

In the Punjab there was a falling off in the total number of operations, but this was due to a decrease in the re-vaccinations only, brought about by an order forbidding unnecessary and repeated re-vaccinations at short intervals. Primary operations increased to 611,576 against 588,416 in the previous year. Depôts for the preparation, storage, and distribution of animal lymph have been established at Amritsar in the winter and at Murree in the summer.

In the Central Provinces seven more vaccinators were employed, and 3,731 more operations were performed, than in the previous year. The successful operations in children under one year increased by 17,411. Of the 18 districts, nine show an increase in primary operations and nine a decrease. The work was much hindered by cholera in some districts. Success was claimed in 96·4 per cent. of the primary operations, and 90·29 per cent. of the cases inspected by civil surgeons were found to have been successful. In addition to the above, the dispensary staff performed 1,837 more operations than in 1890–91. Arm-to-arm vaccination was generally employed, but experiments were made with animal vaccination which are to be repeated on a more extended scale in the present year.

In Berar the total number of vaccinations was greater by 14,694 than in the previous year. The increase is mainly in re-vaccinations to which great attention was paid during the year. The number of operations performed by the special vaccinators increased by nearly 23,000, and the average number per vaccinator from 2,471 to 3,013. This is due in great measure to the dispensary towns having been made over to the special staff, but even excluding these towns the work of the vaccinators as a whole shows an increase. The work done by the dispensary staff has for the same reason very much diminished. The percentage of success claimed by the vaccinators in primary cases was 95·1, and ranged from 98·2 in the Amraoti district to 91·3 in Akola. Native superintendents verified the result in 52·8 per cent. of the cases, and the result recorded by them was 93·3 per cent. successes. In the cases inspected by the Sanitary Commissioner, the percentage of success was 92·6. In re-vaccinations the percentage of success claimed was 29·3, the figure ranging from 39·5 in Wun to 21·6 in Akola. In persons with good marks of previous vaccination a perfect result was obtained from re-vaccination in 34 per cent. of the cases, and a modified vesicle in 16 per cent. In persons with indifferent marks a perfect result was obtained in 21 per cent., and a modified result in 27 per cent. In just about half the cases of both categories the operation produced no result. Animal lymph was used exclusively in this province, lanoline vaccine paste being manufactured at the head-quarter station, Amraoti, in the first instance, and a supply sent out to vaccinators, with which they started work, and kept up the supply by vaccinating from calf to calf. There was little difficulty in obtaining calves or young buffaloes.

There was a considerable falling off in the work performed by the Vaccination Department in Lower Burma, the operations having been less by 10,812 than in the previous year. The decrease was most noticeable in the Irrawaddy and Pegu divisions, while in the Tenasserim division there was a considerable increase. The absence of small-pox is the principal reason to which this decrease is attributed. It is satisfactory to read that the attitude of the people in Prome is very favourable to vaccination, particularly in the town, where the total absence of small-pox has followed upon the introduction of compulsory vaccination. At Thayetmyo, famine, and the consequent emigration, has caused difficulties in the way of vaccination, and inferior results at Mergui and Shwegyin are attributed to the prejudices of the people. On the other hand, at Moulmein, voluntary applications were received for the vaccination for 442 children. The average number of persons vaccinated by each vaccinator was 1,962 against 2,159 in the previous year, while the cost per successful case increased from Ro. 4-9 to Ro. 5-3. The percentage of success in primary vaccination was 85·2, which does not differ much from the percentages in the previous three years. In the different districts it ranged from 93·18 in Amherst to 64·71 in Salween. There has also been a decrease in the work done by the dispensary staff, which is partly due to municipal vaccinators working up the dispensaries.

In Upper Burma the vaccinators have been increased from 28 to 32, and the average number of vaccinations performed by each vaccinator was 1,812 against 1,356 in the previous year, so that the total number of operations performed by the Vaccination Department staff was 57,985 against 37,956. The percentage of success in primary operations was 85·74 against 83·34 in 1890–91. There is a wide-spread prejudice against the operation throughout the whole province.

In both Upper and Lower Burma calf vaccination has been used with considerable success, especially as a means of increasing or maintaining the supply of pure lymph for arm-to-arm vaccination. Attempts have been made to preserve lymph with glycerine and lanoline in several districts, but with very variable success even in the hands of the same medical officer at different times.

In the Bombay Presidency, compared with the previous year, there was an increase of 54,218 primary vaccinations performed by the vaccination staff and a decrease of 858 in the primary operations of the dispensary staff. In re-vaccinations there was an increase of, respectively, 14,858 and 126 operations in the hands of the two classes of operators. The net result was an increase of 40,218 operations in both classes. In primary cases the rate of success is said to have been 94·95, and it ranged from 97·7 in the Gujarat registration district to 92·9 in the Sind registration district and 74·41 at Aden. In re-vaccinations success was claimed in 62·14 per cent. of cases, and ranged from 81·13 in Aden to 44·26 in the Western registration district. The Sanitary Commissioner estimates that 76·58 per cent. of the "children available for vaccination" have been protected, but in making the calculation he has taken the recorded births, which are probably very much below the actual number, and has also excluded from the available children the recorded deaths, though it is evident that many of the children who died may have been previously vaccinated; moreover, the population dealt with by the Vaccination Department is more by 6,890,452 persons than that from which the vital statistics selected for comparison are collected. Animal lymph was used in many places with varying success. In certain villages in the Poona district, the people provided either a calf or the money necessary to provide one, and much appreciated animal lymph, as it does away with the necessity of taking lymph from the children's arms; on the other hand, in Gadag-Bettigeri, animal vaccination had to be abandoned owing to the difficulty in procuring calves. In the city of Bombay animal vaccination was practised exclusively; at Karachi it was also carried on, but under great difficulties as regards calves. So long as fresh animal or human lymph is available, the Sanitary Commissioner deprecates the use of mixtures of lymph with lanoline or any other preservative. The mixture, he says, must be inferior and less active than pure fresh lymph, and in the case of lanoline there is a danger of its being mistaken for other animal fats and so exciting popular prejudices. He does not, however, allude to a possible advantage of such mixtures, viz., that they can be sent from a central depôt to places where, from difficulties about calves, or other reason, animal lymph is otherwise unavailable.

In the Madras Presidency nine more vaccinators, including temporary operators, were employed than in the previous year. There was an increase of 92,860 in the total operations performed by all classes of vaccinators. The average number of successful

cases per vaccinator, excluding medical subordinates in dispensaries, was 1,220 against 1,120 in 1890–91. There was a slight falling off in the percentage of success which is attributed to changes in the kind of lymph used. Animal lymph of some kind was used in 64 per cent. of the cases. The best results were obtained with lymph fresh from the calf; lymph preserved with glycerine was less successful, and that preserved with lanoline still less so. In September orders were issued for the entire discontinuance of the use of humanised lymph, fresh animal lymph being employed whenever practicable, and lanoline paste only when the use of stored lymph cannot be avoided.

In Coorg, excluding 839 operations performed in dispensaries, 10,430 persons were vaccinated by all classes of vaccinators, against 7,652 in the previous year, namely, 8,883 by the Government vaccinators, 642 by municipal vaccinators, and 905 by special vaccinators employed in the district on account of the small-pox epidemic. The average number of operations performed by each Government vaccinator, including the special men, was 1,398, and by the municipal vaccinators only 321, compared with 877 and 315, respectively, in the previous year. The average cost of each successful case, including the special, but excluding the municipal work, was 0-3-11 against 0-4-0 in 1890.

Sanitary Works—Military.

The total expenditure in 1891–92 on military works, executed for the health and comfort of troops in India, amounted to Rs. 98,32,152 or Rs. 7,29,164 more than in the preceding year. But the details of the different kinds of work are not yet available.

Civil Sanitary Works.

The total income of the 145 municipalities of Bengal amounted to Rs. 31,20,971, and out of this they spent a total of 9,07,220 or 29 per cent. on the three heads of expenditure—Conservancy, Drainage, and Water Supply. There is a faling off of Rs. 31,352 under the heading "Water Supply," but a satisfactory increase under the other headings. Considerable progress has been made in extending the practice of trenching the night soil and using it as manure, and in some cases it is a source of pecuniary gain to the municipality. Prejudices in this matter seem to be gradually giving way. In addition to the above, District and Local Boards spent Rs. 32,934 on wells and tanks, and Rs. 16,283 on drainage channels, and a further sum of Rs. 1,51,046 was spent by private individuals on tanks and other sanitary works. The Sanitary Board of the province seems to have done a great deal of useful work in the matter of schemes for water supply and drainage, which were planned and considered, and brought to the notice of the municipalities by the Sanitary Commissioner and Sanitary Engineer. The following were the more important matters under the consideration of the Board during the year :—

(1) A water supply for the town of Howrah.
(2) A drainage scheme for Julpigoree.
(3) A scheme for the drainage of Puri.
(4) A comprehensive project for the drainage of the riparian towns on the left bank of the Hooghly.
(5) Improvement of the Burdwan waterworks.
(6) Surveys of the towns of Jamalpur and Pabna with a view to proper drainage schemes.

In the North-Western Provinces and Oudh the following are instanced by the Sanitary Commissioner as the most important sanitary features of the year, viz. :—

(1) The completion of the Allahabad waterworks.
(2) The elaboration of schemes for water supply and sewerage at Cawnpore.
(3) The furtherance of a water supply scheme for Lucknow.
(4) The progress made in the waterworks at Benares.
(5) The completion of measures to improve the sanitation of the Hill Stations, Naini Tal and Mussoorie.
(6) The improvement of the drainage of large tracts of country which are affected by irrigation channels or water-logged, especially the Barhganga and Kali Doab schemes.
(7) The passing of a Water Works Act.
(8) The introduction of a Bill to make better provision for sanitation in villages.

(9) The introduction of Bills conferring powers upon municipalities in connection with the sanitation of lodging houses and the construction of drainage and sewerage works.

In many other instances the municipalities have spent considerable sums and a fair proportion of their income on sanitary works, and altogether considerable advance appears to have been made in the matter of sanitation throughout the provinces.

The Sanitary Board of the North-Western Provinces and Oudh met three times during the year and considered the following subjects:—

(1) A three years' programme of the more pressing drainage works to be undertaken in the provinces.
(2) Drainage obstructions in the non-canal districts.
(3) Standard plans for latrines, slaughter houses, &c.
(4) The village sanitation Bill.
(5) The conservancy establishment of municipalities.
(6) The promotion of vaccination by voluntary vaccinators.

In the municipalities of the Punjab, Rs. 12,04,769 were spent on sanitary works out of a total income of Rs. 40,17,724. The Peshawar and Abbottabad waterworks were completed, and the Delhi waterworks were approaching completion at the end of the year. Waterworks have been commenced at Dalhousie, and at Lahore and Rawalpindi the water systems have been extended. The Jullundur drainage works have been completed, and those at Ludhiana, Gujranwala, and Kohat are well advanced. Similar works for drainage are in hand at Faridabad, Mozang (suburb of Lahore), and Peshawar. The main sewer at Simla has been extended. Numerous schemes for waterworks or improved drainage are still under consideration at various places. A village sanitation Bill has been framed by the Sanitary Board and is under consideration. The Board has also sent in recommendations with a view to improving the registration of births and deaths, and on various other subjects of minor importance. The income from the sale of manure and town sweepings is steadily increasing.

The percentage of income spent on sanitation (excluding medical relief and vaccination) in the *sadar* towns of the Central Provinces ranged from 38·82 at Bhandara to 10·18 at Sambalpur, and was less than 20 in twelve of the nineteen towns. During the year the Chief Commissioner published an important resolution on the subject of rural sanitation. It is proposed to group the villages into sanitary circles of convenient size, so that their sanitary condition may be conveniently investigated by expert sanitary inspectors, specially appointed for the purpose, as well as by the Civil Surgeons and other district officials. The information so collected, together with particulars of the financial position of the villages, will be submitted by the Civil Surgeons to the Sanitary Board, which will issue orders upon it, directing the works to be undertaken, and allotting to the different circles the funds set apart annually by the Government towards this object. The Sanitary Board has at the same time been enlarged by adding to it the Commissioner of the Division, and the Deputy Commissioner and Civil Surgeon of the district in which the Board happens to be sitting, these local officials afterwards carrying out the orders of the Board in their circles. It is intended that the Board should meet at least once a year in each of the five divisions into which the provinces are divided. The Sanitary Board, in the year under review, met twice at Nagpur and once at Chhindwara, and was engaged principallly with the improvement of the Nagpur water-supply and the elaboration of the details of the above-mentioned scheme for rural sanitation.

In Berar 48·6 per cent. of the total income of the municipalities was spent on sanitation. The expenditure under the heading "Conservancy" ranged from 53·3 per cent. of income at Ellichpur to 11·2 at Camp Amraoti. In one municipality an attempt was made to dispose of night-soil by manufacturing it into poudrette, but as yet there is no demand for the article. There was appreciable expenditure on "drainage" in only three towns, the others pleading want of funds for such works. Considerable sums have been spent on "water-supply" in four municipalities. At Akola the municipality paid Rs. 10,000 towards the "Kapsi" water-supply scheme; and at Amraoti the Kalapani tank was improved by extending the catchment area at a cost of Rs. 8,785. In the districts, excluding municipalities, a total sum of Rs. 1,62,859 was allotted to sanitary works, of which Rs. 1,57,618 were actually spent. Of this sum 24·9 per cent. was devoted to conservancy, 18·7 to drainage, and 23·1 to water-supply. The Buldana water-supply has been completed at a cost, in the present year, of Rs. 49,670, and provides for a population of 4,000 people at the rate of

10 gallons of water per head. A sum of Rs. 14,850 was spent on the Akola water-supply, a scheme which provides for the supply of 28,000 persons at 10 gallons per head. District Sanitary Boards assembled at the head-quarter stations of the districts twice during the year. In some villages the limits have been demarcated, beyond which household sweepings must be removed and people must resort for purposes of nature, while in the case of certain rivers, which are the sources of the water-supply, restrictions have been placed on such operations as bathing and washing. The Sanitary Commissioner is, however, much disappointed with the actual results, and thinks that little heed is paid to such regulations. Some towns have been surveyed in connection with drainage schemes, and a good deal has been effected in the way of deepening existing wells and sinking new ones. A sanitary inspection was also made of all places where large annual fairs are held, and steps taken to improve the water-supply in particular in such places.

The percentage of total income spent on sanitary works (exclusive of roads and bridges) in the principal municipalities, towns, unions, and stations of Assam averaged 39·59, and ranged from 71·63 at Gauhati to 10·56 at Barpeta. It exceeded 20 per cent. in 15 of the 17 towns for which particulars are given, and exceeded 30 in 12. Endeavours are being made to introduce cremators or incinerators for the disposal of night-soil and rubbish into all the towns, as sewage farming has so far been found impracticable except in jails. The use of well water is said to be increasing, and the tanks are being gradually filled up. There is a Sanitary Board for the province, which is intended to direct the progress of village sanitation, but no particulars of its work in this respect are given in the Sanitary Commissioner's report.

The expenditure by the Public Works Department on sanitary works in Lower and Upper Burma was as follows:—

	Lower.	Upper.
	Rs.	Rs.
Water-supply	4,349	23,915
Drainage	23,338	4,092
Latrines and urinals	1,307	3,841
Markets	55,393	7,891

In the municipalities no work of major importance was undertaken during the year, but considerable sums were spent by many of them in such minor works as extending the surface drains, constructing and repairing wells, erecting latrines, &c. The water-supply of the towns is generally unsatisfactory, and the drainage defective, owing to the low level of the original sites. In Rangoon the Shone and Ault system of sewerage has worked well and been considerably extended. The water-works at Prome are said to have proved satisfactory. A scheme for supplying Moulmein with pure water has had to be abandoned on account of its costliness. At Mandalay projects are still under consideration for water-supply and drainage. The Sanitary Commissioner remarks that "the question of village sanitation is one which demands more attention. "There is too great a tendency to regard it as hopeless and therefore to abandon all "attempts at improvements."

In the Madras Presidency 37·6 per cent. of the total income of the municipalities was allotted to sanitation for 1891–92, and the actual expenditure in the first nine months of the year amounted to 55·8 per cent. of the allotment. The sources of the water-supply and the systems of drainage remained in much the same defective condition as before, but in some towns schemes for drainage and projects for an improved water-supply were in progress, under the guidance of the Sanitary Engineer. The conservancy arrangements continued in much the same state as in former years, being well looked after in some towns, but in others neglected. Compared with the previous year, there has been an increase in the total expenditure under the heads of sweepers, etc., *toties* for public and private latrines, tank-watchers, carts, dust-bins, public and private latrines. The total number of public latrines increased from 958 to 1,191, and the system of cleaning private latrines by municipal agency made some progress both as regards the number of towns into which this system has been introduced and also the number of houses served.

In the districts which are controlled by the Local Fund Boards, only 7·9 per cent. of the total income was allotted to sanitation in 1891–92, and the actual expenditure

was about 55 per cent. of the allotment during the first nine months of the year. With three exceptions the districts have failed, the Sanitary Commissioner says, to utilise a fair proportion of their allotment. The sanitary works undertaken during the year consisted in sinking and repairing wells, constructing and repairing tanks, latrines, drains, dust-bins, constructing markets, clearing and improving village sites, &c.

In the Bombay Presidency the Ahmedabad water-works were opened during the year, but no other work of major importance seems to have been undertaken. Many of the municipalities appear to spend a very small portion of their income on conservancy, even when they show considerable savings at the end of the year. Something has been spent by all the local district boards under the heading "Water-supply," chiefly building or repairing wells and tanks, though hardly anything under any other head. The total amount spent on sanitation is also in many cases very small in comparison with the income. From the notes of the Sanitary Commissioner's inspections it would appear that sanitation is very much neglected in many of the towns, and no mention is made of any scheme of village sanitation, nor had any Sanitary Board been formed in this Presidency in 1891. A Sanitary Engineer has since been appointed and a Sanitary Board has been established, whose proceedings will be included in the next report.

No sanitary works of much importance appear to have been carried out in Coorg during the year. A sum of Rs. 1,273 was spent by the Public Works Department in constructing, and of Rs. 159 in repairing, wells at various places in the district. A sum of Rs. 4,597 was spent by municipalities in so-called sanitary works, but a large proportion of these consists of repairs to roads, bridges, and buildings, and have little connection with sanitation. From the Civil Surgeon's description of the town of Merkara there would appear to be much need of improvement in the drainage, conservancy, and water supply.

General Remarks.

Cholera at the Haj of 1891.

There was again an outbreak of cholera at the Haj of 1891, but it was not so violent as that of the previous year, and was confined almost entirely to the pilgrims, while the residents of Mecca and Jedda almost entirely escaped. The sanitary state of Moona is said to have been unusually good, and the town of Jedda had been put in fair order, but Mecca was in the usual neglected and filthy state. The disease appeared at Mecca on the 11th of July, five days before the Haj, but no official record of the deaths seems to have been kept until the 17th, though 59 deaths are known to have occurred at Mecca before that date. It continued until the 20th of August, and the total number of deaths officially recorded in Mecca, Jedda, and Moona combined was 3,115.

Cholera also at Aleppo.

From a report received from the Residency Surgeon, Baghdad, it appears that cholera was also prevalent in Aleppo, Antioch, and the surrounding districts in July, the disease making its appearance about the 7th of July and continuing throughout the month.

Quarantine at Camaran.

During the season 32 ships with 22,303 pilgrims arrived at the quarantine station at Camaran. Of the total number of pilgrims 13,371 came from Bombay and Calcutta, but it may be noted that many of these were not natives of India. The quarantine imposed on healthy ships varies from five to ten days, but in the case of arrivals from an Indian port is never less than ten days. None of the ships had any cases of cholera among the passengers and crew on the voyage between India and Camaran, and, with one exception, they were allowed to proceed to Jedda on the conclusion of the ten days' quarantine. In the case of the ship "Sculptor" there had been four deaths on board before she reached Camaran on the 1st of May, but three of these were due to debility in old people and one to small-pox. The usual ten days' quarantine was imposed upon her, and all went well until the 8th of May, when cholera broke out amongst her passengers on shore. Between the 8th and 17th of May there were 17 cases of cholera in this batch of pilgrims, and an Arab attendant of the "Lazeret" also died of the same disease. Eventually, on the 21st of May, the pilgrims re-embarked on the "Sculptor" and returned to Bombay. The usual complaints are made of the insanitary state of the quarantine camps. The water supplied to the pilgrims is said to be brackish and turbid, the food-supplies indifferent, the huts very much overcrowded, and the latrines neither cleaned nor disinfected.

Researches by the Special Assistant.

Surgeon-Lieutenant-Colonel D. D. Cunningham, Special Assistant to the Sanitary Commissioner with the Government of India, has continued his enquiry into the pathology of cholera, and his conclusions may be summarised as follows:—

I. The continued study of the various forms of comma bacilli occurring in association with cholera confirms the view that there is no definite relation between the disease and the presence of a specific bacillus, presenting the characters of Koch's comma-bacillus, within the intestinal canal.

II. The character and the persistence of the differences between the various forms after continuous cultivation under like conditions for periods of years affords satisfactory evidence that they are really distinct species, and not mere "atypical varieties" of one and the same species, as is maintained by Koch's followers.

III. The question whether we elect to consider them species of varieties is of no practical importance as regards the validity of Koch's theory, because, if we accept the extremely generalised conception of specificity which the latter view implies, we cannot refuse to regard Prior and Finkler's and Metschnikoff's commas as belonging to the same group of varieties, and with this the specific relation of the species to cholera falls to the ground just as effectively as it would were the association of the disease with many distinct species recognised. If we narrow our definition of species we find the disease associated with several distinct organisms; if we extend it, we find the comma-bacillus is no longer peculiar to the disease.

IV. There is more and more evidence to show that the prevalence of comma-bacilli in choleraic media is a consequence, and not a cause, of abnormal conditions in the host. A very striking piece of evidence in support of this view came out in connexion with an outbreak of ptomaine-poisoning, which occurred in the ship "Crofton Hall" during the course of the present year, for in one of the cases here, which did not otherwise in any way differ in characters from the rest, the intestinal discharges yielded an "atypical variety" of choleraic commas, differing in details from any previously cultivated, but yet presenting features more closely resembling those of "typical" commas than many others associated with true cases of cholera.

In addition to cholera, Surgeon-Lieutenant-Colonel Cunningham has investigated several other animal and vegetable diseases during the year. Several cases of so-called "Cerebro-spinal fever" occurring in the Alipore Jail were examined, but hitherto without any positive results, neither cultivations of the fluids nor sections of the tissues having revealed the constant presence of any specific organisms. Numerous specimens of blood from cases of malarial disease have also been studied, but with equally inconclusive results. As regards diseases of the lower animals, the most interesting materials were derived from an outbreak of Saprolegnia-disease, which occurred among the fish in the Zoological Garden, Alipur. Various interesting blights affecting economic plants have come under observation, including an apparently new fungal disease of potatoes, a root-blight of lucerne, and a destructive chytridial blight affecting the young shoots of the tea plant.

Full details in regard to most of these points will be published in the forthcoming number of the Scientific Memoirs.

ABSTRACT OF REPORT OF THE SANITARY COMMISSIONER FOR MADRAS FOR 1891.

(Surgeon Lieutenant-Colonel J. A. Laing.)

General Population.

Vital statistics.

No change has taken place in the mode of registering births and deaths since last annual report, and, although there has been an improvement on the whole in this work, yet real accuracy cannot at present be expected considering the agency—an uneducated one in most cases—through which these statistics have to be collected. In para. 10 of the memorandum by the Army Sanitary Commission on the Indian Sanitary Reports for 1889, it is suggested that the vaccination staff should examine the registers of births and deaths in their tours to test their accuracy. This plan has been adopted in the Madras Presidency since 1879. All Deputy Inspectors of Vaccination are required to examine the birth and death registers of any village or town they visit, and in their weekly diaries they report on the condition, &c., of the registration of births and deaths as found on personal inspection.

The record of births and deaths during the year under report does not extend to the whole population as ascertained at the census of 1881, viz., 30,835,771; there are certain tracts of zemindary estates, &c., for which no birth and death returns are received. The total population, for which returns were furnished in 1891, was 28,513,734, being 2,322,037 short of the total population.

The total number of births registered during 1891 amounted to 924,238 against 893,645 in 1890, showing an increase of 30,593 for the year under report. The ratio per 1,000 of population was 32·4, which is the highest birth-rate recorded in any year in the Presidency. The following table shows the number of births registered in each of the past 21 years, and it is satisfactory to find that the steady improvement, which has been observed for several years past, continued in the year under report :—

Years.	Population for which returns were received.	Births.	Birth-ratio per 1,000.	Deaths.	Death-ratio per 1,000.
1871	24,555,046	506,707	20·6	444,371	18·0
1872	30,147,779	543,325	18·02	501,482	16·6
1873	30,287,842	527,363	17·4	506,894	16·4
1874	30,360,221	569,631	18·7	516,848	17·0
1875	30,278,903	625,953	20·6	641,260	21·1
1876	29,157,056	619,748	21·2	680,384	23·3
1877	29,209,542	467,543	16·01	1,556,312	53·2
1878	29,127,205	341,388	11·7	810,921	27·8
1879	28,991,267	467,938	16·1	549,390	18·9
1880	28,778,097	641,769	22·3	454,101	15·7
1881	28,676,375	716,672	24·9	465,682	16·2
1882	28,887,111	743,777	25·7	470,700	16·2
1883	28,503,100	774,754	27·2	541,930	19·0
1884	28,151,952	810,102	28·8	650,335	23·1
1885	28,118,178	807,105	28·7	615,449	21·8
1886	28,043,538	837,077	29·8	553,927	19·7
1887	27,907,840	849,551	30·4	604,775	21·6
1888	27,852,474	833,345	29·9	597,015	21·4
1889	28,050,087	867,523	30·9	661,178	23·5
1890	28,522,313	893,645	31·3	650,394	22·8
1891	28,513,734	924,238	32·4	747,553	26·2

The birth-rates in the several districts ranged from 44·7 in Madras to 22·7 in Godávari. In only four districts (Chingleput, Godávari, Malabar, and Tinnevelly) were the birth-rates lower than the average birth-rates for the previous 10 years. In five districts, viz., Chingleput, Kurnool, Malabar, Tinnevelly, and Trichinopoly, the birth-rates were lower than those in 1890; in one (South Canara) they were the same, while in the remaining 15 they were higher. In the Ganjam district there was a marked increase in the birth-rate in 1891 when compared with that of 1890. This, while evidencing improved registration, indicates also that the depressing effects of the distress in 1889 on the fecundity of the people are happily passing away. The districts

which returned the highest birth-rates were Madras (44·7), Salem (40·5), Kurnool (40·4) and Bellary-Anantapur (40·0), and the lowest (Godávari (22·7), Malabar (23·6), Ganjam (25·8) and Nílgiris (28·3).

In four districts (Madras, Salem, Kurnool, and Bellary-Anantapur) the birth-rate was 40 per 1,000 and above, in 10 it was between 30 and 40, and in the remaining seven it was below 30 per 1,000.

Of the 924,238 births registered in 1891, there were 471,144 males and 453,094 females, or in proportion of 103·9 males to every 100 female births. In 1890 the number of males born to every 100 females was 104·2.

As is generally the case in this Presidency, there were fewer births registered in the first and second quarters of the year than in the third and fourth. The largest number of births registered usually occurs in the months of July or August and the fewest in February, and the results obtained this year are not at variance with the experience of former years.

As in past years the births exceeded the deaths, and for 1891 the excess was at the rate of 6·2 per 1,000 of population. In all districts, with the exception of Madras and South Arcot, there was an excess of births over deaths registered. In Madras the deaths exceeded the births at the rate of 14·7 per 1,000 of population, the increase being due to the prevalence of cholera, fevers and bowel complaints during 1891.

The rural birth-rate for the Presidency was, as usual, higher than the urban, the ratios per 1,000 of population being 32·2 and 31·5 respectively. In eight districts (Coimbatore, Ganjam, Godavári, Madura, Malabar, Nílgiris, South Canara, and Vizagapatam), the urban birth-rates were higher than the rural birth-rates.

On the whole, there has been an improvement in the registration of births in municipalities during 1891 when compared with 1890. In 12 towns in 1891, against nine in 1890, the birth-rate was above 40 per 1,000; in 31 towns in 1891 the birth-rates were between 30 and 40 per 1,000, and in 12 towns in 1891, against 18 in 1890 the birth-rates were below 30 per 1,000. In seventeen towns (Bezváda, Tuticórin, Cochin, Calicut, Adóni, Erode, Kumbakónam, Kurnool, Rajahmundry, Tirupati, Ellore, Tanjore, Chidambaram, Trichinopoly, Nellore, Negapatam, and Cuddapah) in 1891, against sixteen towns in 1890, the birth-rates were lower than the death-rates.

Deaths.

During 1891 there were 747,553 deaths registered in the Madras Presidency, corresponding to an annual death-rate of 26·2 per 1,000 of the population. This rate of mortality is higher than any rate which has been recorded since 1878. The death-rate for 1890 was 22·8 per 1,000, and the average rate for the previous five years was 21·8. The death-rate for the year under review was, therefore, 3·4 per 1,000 greater than that of the previous year, and 4·4 per 1,000 greater than the average of the previous five years.

The following table, which gives the principal causes of death, shows the total mortality of the Presidency during the past 21 years :—

Years.	Total Deaths.	Cholera.	Small-pox.	Fevers.	Bowel Complaints.	Injuries.	Other Causes.
1871	444,371	17,656	20,823	192,469	38,928	15,323	159,172
1872	501,482	13,247	39,074	214,148	39,387	15,150	180,476
1873	506,894	840	51,784	222,843	36,392	14,251	180,784
1874	516,848	313	48,343	226,220	37,993	13,065	190,914
1875	641,260	94,546	24,775	252,042	37,484	12,421	219,992
1876	680,384	148,193	23,469	230,092	38,176	11,175	229,279
1877	1,556,312	357,430	88,321	469,241	133,366	16,460	491,494
1878	810,921	47,167	56,360	374,443	48,083	15,007	269,861
1879	549,390	13,296	17,840	285,477	23,218	12,619	196,940
1880	454,101	613	14,529	209,940	19,622	10,845	198,552
1881	465,682	9,446	15,776	203,542	18,961	11,527	206,430
1882	470,700	23,604	20,159	188,561	19,958	11,611	206,807
1883	541,930	36,284	37,975	203,786	22,098	11,509	230,278
1884	650,335	75,476	61,247	215,977	28,775	11,502	257,358
1885	615,449	58,109	34,726	218,786	31,209	11,659	260,960
1886	553,927	12,417	17,129	221,679	27,379	13,103	262,220
1887	604,775	28,359	21,472	240,860	26,679	11,328	276,077
1888	597,015	58,677	21,858	204,561	27,721	11,401	272,797
1889	661,178	76,020	29,138	230,172	29,122	11,506	285,220
1890	650,394	35,288	28,092	262,855	26,608	10,402	287,149
1891	747,553	98,773	41,322	247,029	*34,223	10,542	315,664

* Dysentery and diarrrhœa only.

With the exception of "fevers" the number of deaths registered under each of the principal causes in 1891 was greater than that recorded in 1890.

Of the 747,553 deaths recorded, 382,419 occurred among males and 365,134 among females, the annual death-rates per 1,000 having been 27·1 for males and 25·3 for females. In only one district (Madras) was the female death-rate (60·6) above the registered male death-rate (58·2). The registered male is thus higher than the female death-rate, and this is in accordance with the experience of former years. For every 100 females who died 104·7 deaths among males were registered, but the proportion varied considerably in some districts.

Out of a total death-roll of 747,553, there were 154,688 deaths amongst children under one year of age, and 124,284 among children above one year and under five, the respective death-rates having been 172·0 and 43·1 per 1,000 of population, calculated on the population according to the census of 1881. In England, the death-rate of children under one year of age is calculated on the number of children born during the year, and when this is applied to Madras, it will be found that the death-rate of infants under one year of age in 1891 was 167·4. The infantile death-rate or proportion of deaths of infants in the first year of life to 1,000 registered births in 1891 was 167 in the 28 towns, ranging from 137 in Brighton to 227 in Preston. The deaths in children under five years of age formed 37·3 per cent. of the total deaths. The period when fewest deaths occurred in 1891 was, as is usually the case, in the age of above 10 and under 15, the ratio per 1,000 of population being 7·5.

With regard to the influence of sex on mortality, it appears that from infancy up to 15 years of age females have a better chance of life than males, and also from 30 years upwards. Between the ages of 15 and 20, a period burdened with maternal cares, the death-rate amongst females was greater than that of males.

According to classes, the deaths registered amongst Hindus were in the proportion of 26·3 per 1,000; Muhammadans, 25·7 per 1,000; Native Christians, 22·3 per 1,000; and "other classes," 13·1 per 1,000. In 11 districts (Chingleput, Cuddapah, Godávari, Kurnool, Madura, Nellore, Nílgiris, North Arcot, Salem, Tinnevelly, and Trichinopoly), no deaths were recorded among "other classes."

In normal years the smallest number of deaths is registered in March, April, and May. In 1891, the smallest number of deaths (46,530) took place in March and the largest (97,535) in December. The most unhealthy months were November and December, and the most healthy March, April, and May. A sudden rise in the death-rate usually occurs in December, and this was also the case in 1891.

According to districts, the highest death-rate (59·4) occurred (as has been the case for some years past) in Madras, and was due to the high death-rates from fevers, diarrhœa, and dysentery, and all other causes when compared with the ratios of other districts. The death-rate varied in the several districts, and (excluding Madras) ranged from 13·5 per 1,000 in Ganjam to 35·3 per 1,000 in South Arcot. In all districts, with the exception of South Canara and Ganjam, the death-rate of each district was higher than the average rate of the previous 10 years. The amount of increase, however, varied in the different parts of the Presidency. In the districts of Nellore, Cuddapah, Salem, Trichinopoly, North Arcot, Chingleput, Nílgiris, Coimbatore, and Kurnool, the death-rate was from 5·7 to 8·7 per 1,000 higher than the average of the previous 10 years; and in Anantapur-Bellary, Madura, Kistna, South Arcot, and Madras, the increase was from 9·1 to 19·8 per 1,000. In two districts (Salem and South Canara) the recorded death-rate per 1,000 of population was lower in 1891 than in 1890, but in all the other districts (with the exception of Vizagapatam, where it was the same) the death-rate was higher.

The death-rates among the urban and rural populations were 30·0 and 25·4, respectively, against 22·1 and 22·2 in 1890. In all districts, with the exception of Chingleput and South Arcot, the urban death-rate was higher than the rural. Judging from the death-rates amongst the rural population, the most unhealthy districts were South Arcot, Chingleput, and Kurnool.

The average death-rate of the 55 municipal towns was 31·8 per 1,000 of population or 5·9 higher than the district rate. The highest death-rates occurred in Bezváda (64·3), Palni (49·7), Calicut (47·6), and Tuticorin (47·4), and the lowest in Berhampore (19·3), Chicacole (19·1) and Cocanada (17·3).

Chief Diseases.

Cholera.

Cholera prevailed with great severity during the year under review, and the epidemic was the severest which has visited this Presidency since 1877. The number of recorded deaths amounted in all to 98,773, or at the rate of 3·5 per 1,000 of population.

The following table shows the ratios of cholera deaths for the past 21 years :—

Years.	Ratio of cholera deaths per 1,000 of population.	Years.	Ratio of cholera deaths per 1,000 of population.	Years.	Ratio of cholera deaths per 1,000 of population.
1871	0·7	1878	1·6	1885	2·06
1872	0·4	1879	0·4	1886	0·4
1873	0·02	1880	0·02	1887	1·01
1874	0·01	1881	0·3	1888	2·1
1875	3·1	1882	0·8	1889	2·7
1876	5·08	1883	1·2	1890	1·2
1877	12·2	1884	2·7	1891	3·5

The greatest mortality from cholera took place during the months of July, August, November, and December. In no month of the year was cholera absent from the Madras Presidency, and the greatest number of deaths (23,822) was registered in December. As regards this Presidency, cholera usually attains its maximum degree of intensity during the cold weather months, and 1891 was no exception to the rule.

In January, deaths from cholera were reported from 14 districts, the number of casualties having amounted to 5,912. In February and March the disease subsided, as the deaths were only 2,837 and 1,971 respectively. In April, there was an increase, and 2,937 deaths were recorded. In May there was a decrease, but in June, July, and August an increase took place, and 3,462, 9,856, and 16,258 deaths respectively were reported. In September the disease somewhat abated, and still further declined in October. In November it increased, and in December it assumed a still greater intensity, and 23,822 deaths were reported.

In every district in the Presidency deaths from cholera were reported during the year, and in eight districts (Chingleput, Coimbatore, Madura, Malabar, Salem, South Arcot, Tanjore, and Trichinopoly), deaths were registered during every month of the year. In three districts the mortality from cholera was slight, thus in Vizagapatam, the death-rate per 1,000 of population was 0·02, in Ganjam 0·09, and in South Canara 0·3. The districts which suffered most from cholera were South Arcot with a death-rate of 8·8 per 1,000 of population, Madura 5·9, Bellary-Anantapur 5·6, Cuddapah 5·5, and Chingleput and Coimbatore 5·0. In all districts, with the exception of Vizagapatam, Ganjam, Godávari, and South Canara, the death-rates were higher than the average of the previous five years. In one district only (Tinnevelly), the death-rate per 1,000 of population was lower than in 1890.

Out of 44,449 villages in the Presidency, 8,975 or 20·2 per cent. were affected by cholera. In 1890, there were 4,197 or 9·4 per cent. of the villages affected.

In 65 out of a total of 77 towns, deaths from cholera were recorded, and in the remaining 12 no deaths were registered.

Of the 98,773 deaths registered in 1891 from cholera, 6,789 occurred in municipal towns. In 7 municipalities (Berhampore, Parlákimedi, Chicacole, Vizianagrum, Anakápalle, Bimlipatam and Mangalore) no deaths from cholera were recorded. Calculated on the populations of the affected towns and districts, the cholera death-rate in municipal towns was 5·1, and that in the district 3·4. The mortality from cholera in affected towns was thus a third greater than it was in the affected districts. The death-rates in 34 towns exceeded those of the districts and in 14 they were less.

The reports of the year do not cast any new light upon the etiology of the disease, but it may be safely assumed that, however obscure the origin and behaviour of the epidemic may be, yet its spread in a place depends largely on the sanitary conditions present and the very inferior water-supply. In consequence of deficient rainfall in 1891, many of the tanks and wells, which were drinking-water supplies, became dry and people had to use any water they could obtain. Further, owing to the drought, the water in the tanks and wells was much reduced in quantity, and, therefore, had a much larger percentage of dissolved and suspended impurities. Such measures as could be taken were resorted to by the district authorities to arrest the progress of the disease and to mitigate the sufferings of the people. Medical subordinates and members of the Vaccination Department were employed in distri-

buting medicines and rendering aid to those ill. Efforts were also made to improve the conservancy arrangements; wells were cleaned out and deepened; and in places people were prohibited from taking water from sources suspected of originating or fostering the disease.

Small-pox.

The total deaths registered in 1891 from small-pox were 41,322, against 28,092 in 1890, and a decennial mean of 28,757. The small-pox death rate for the Presidency during the year under review was 1·4 per 1,000. of population, for 1890 it was 1·0, and for the five year period 1886–90 the annual average rate was 0·8. The mortality from small-pox for the year under review is higher than that of any of the six previous years, and 0·6 higher than the mean ratio per 1,000 for the previous five years.

The greatest number of deaths from small-pox occurred in February and the fewest in September. It is usually during the months of February, March, and April that small-pox prevails most severely, and the months of August, September, and October are those in which the fewest deaths are registered.

There were 6,786 children under 1 year of age, and 15,593 over 1 and under 12 years of age who died from small-pox in 1891. The largest number of deaths from small-pox occurred, as is usually the case, among infants and children under 12 years of age, no less than 54·1 per cent. of the total mortality from small-pox being borne by them. Compared with the preceding year, it is to be observed that a very small proportion of infants perished from this cause in 1891. The mortality among males was slightly in excess of that of females.

In all districts deaths from small-pox were recorded. Although in 1891 the total deaths (41,322) exceeded those (28,092) for 1890, yet in 11 districts (Bellary-Anantapur, Chingleput, Cuddapah, Ganjam, Kurnool, North Arcot, Salem, South Arcot. Tanjore, Trichinopoly, and Vizagapatam) in 1891, the death-rates per 1,000 of population were lower; in two (Madras and Nellore) they were the same; and in the remaining eight (Coimbatore, Godávari, Kistna, Madura, Malabar, Nílgiris, South Canara, and Tinnevelly) they were higher. In nine districts (Bellary-Anantapur, Cuddapah, Ganjam, Kurnool, Nellore, Salem, South Canara, Trichinopoly, and Vizagapatam) the ratios per 1,000 of population were lower than the mean ratios per 1,000 of population for the previous five years; in the Nílgiris they were the same, while in the remaining 11 districts they were higher. The highest death-rates were obtained in Kistna (5·3), Malabar (2·7), South Arcot (2·6), and Madura (2·4). The lowest recorded death-rate (0·1) was registered in both the South Canara and Ganjam districts. The mortality (0·2) was also low in the Madras, Vizagapatam and Nellore districts.

In 44 of the 55 municipal towns, deaths from small-pox were registered. Calicut heads the list with a ratio of 20·4 per 1,000 of populatiou, the rate for the district being 2·7. In this town vaccination is carried on in a very unsatisfactory manner. The lowest ratio (0·03) per 1,000 of population took place in Vizagapatam.

Fevers.

The registered mortality from "fevers" during the year was 247,029, yielding a ratio of 8·6 per 1,000 of population against 262,855 or 9·2 per 1,000 in 1890, and 232,025, or 8·2 the mean of the previous five years. Compared with 1890 there was thus a decrease of 15,826 for the year under report. In none of the preceeding 10 years, with the exception of 1890, was the fever mortality so high as in the year under review.

In all districts, with the exception of Chingleput, Ganjam, Godávari, Madras, Nellore, and Tanjore, the death-rates from fever were lower than those of the previous year. The highest death-rate (21·1) occurred, as usually happens, in the Kurnool district, and the lowest (2·3) in the Tanjore district. The rate of fever mortality was high in the districts of Madras (17·0), Nílgiris (16·9), Cuddapah (14·9) and Vizagapatam (14·3).

The largest number of deaths (27,311) was recorded in the month of December and the fewest (16,753) in March.

The district presidency rate was 8·8, or 2·4 more than the municipal presidency rate (6·4). In 16 municipal towns, the death-rates were higher than those of the districts, in one they were the same, while in the remaining 38 municipalities they were lower. It is possible that the lower rate of fever mortality in towns as compared with that in rural circles is partly due to the indiscriminate classification of all diseases with inflammatory symptoms as fever in the more rural or less educated tracts of the country.

Dysentery and diarrhœa.

There were 34,223 deaths recorded under "dysentery and diarrhœa" in the Presidency during the year, or 7,615 more than were registered last year from bowel-complaints.

The death-rate for 1891 was 1·2, and was higher than any of the previous recorded death-rates from bowel-complaints since 1882.

The district which recorded the highest mortality from "dysentery and diarrhœa," was Madras with a death-rate of 11·5 per 1,000, and following it comes Chingleput with a ratio of 4·2 per 1,000 of population. The two districts usually return the highest death-ratios from this complaint. The lowest ratios were recorded in the Cuddapah, Ganjam, Godávari, Nellore, and Vizagapatam districts, the death-rate being the same in each, viz., 0·5 per 1,000 of population, Ganjam excepted, where it was only 0·2.

The largest number of deaths was recorded in December and the fewest in May.

The district presidency rate was 1·1 per 1,000 of population, and was 2·3 less than the municipal presidency rate (3·4). In 49 municipal towns, the death-rates were higher than in the districts, in five they were lower, and in one equal.

The highest death-rate in municipal towns from "dysentery and diarrhœa" is reported to have occurred at Bezváda, where it attained the ratio of 11·9 and next to it comes Tuticorin with a death-rate of 8·7. These two municipalities usually returned the highest death ratios from this cause. The lowest death-rate (0·2) was registered at Adóni.

Injuries.

The deaths recorded from injuries amounted to 10,542, or 140 more than the deaths registered in 1890, and the death-rate per 1,000 of population was 0·4. There was a decrease in the number of deaths registered from suicide, wounds and accidents in 1891 as compared with 1890, but an increase in the number of deaths from snake-bite and killed by wild beasts. The death-rates varied in the different districts (excluding towns) ranging from 0·1 per 1,000 of population in the Nílgiris to 0·5 in the Cuddapah, Kurnool, North Arcot, and South Canara districts.

The deaths ascribed to wounds and accidents numbered 6,322, and, as frequently happens, the largest number occurred in the North Arcot district. Snakes and wild beasts caused 2,304 deaths in 1891 against 2,042 in 1890, the largest number (214) occurring, as usually happens, in the South Arcot district.

All other causes.

The registered mortality from "all other causes" amounted to 315,664 in 1891 against 287,149 in 1890, and 276,693 the mean of the five years 1886–90. The death-rates under this head was 11·1 per 1,000 against 10·1 in 1890.

Sanitary Works.

Municipalities.

Excluding the city of Madras, which has an Act (I. of 1884) of its own, the number of municipalities administered under the District Municipalities Act, IV. of 1884, was as in previous years, 55.

Sanitary Works.—The nature and description of the sanitary works executed in the different towns will be found summarized in the appended statement, which also shows the condition of each town in respect of its water-supply, drainage, and conservancy, and the rate of mortality per 1,000 of population. As in previous years, the works undertaken during 1891 were of the following kinds :—

(*a.*) Sinking, repairing, and cleansing wells, &c.

(*b.*) Construction and repair of drains, public latrines, cinerators, dust-bins, markets, slaughter-houses, &c.

(*c.*) Improvement of village sites, &c.

In some towns comprehensive schemes for draining them and projects for giving the people the benefits of an improved and wholesome water-supply were in progress, and in others they were under preparation or investigation. Detailed information regarding these will be found furnished in the report of the Sanitary Engineer. As heretofore, the sources of water-supply and the systems of drainage remained very much in the same defective condition, and until these potent auxiliaries to health are put in a satisfactory condition a marked diminution in the mortality of our towns cannot be hoped for. The conservancy arrangements which obtained in the towns continued very much the same as reported on in previous years. In some towns the conservancy arrangements were well looked after, but in others they were very indifferently attended to.

The total estimated income of the mofussil municipalities for 1891-92 was Rs. 26,52,995 against Rs. 21,17,640 for 1890–91. Of this amount the allotment made for sanitation was Rs. 9,97,380 or 37·6 per cent., and the actual expenditure during the first nine months of that year amounted to Rs. 5,57,140 or 55·8 per cent. of the allotment. The municipal councils of several of the towns did not utilise a fair share of the sanctioned allotments in the period under notice.

The Madras Local Boards Act V. of 1884 was in operation in all the districts of the presidency except Madras, in which the city of Madras Municipal Act I. of 1884 was in force. As in previous years, there were 21 local fund districts corresponding with the collectorates, of which the Collector was the President. Each district board had subordinate to it a number of taluk boards and union panchayats. District Local Fund Boards.

Sanitary Works.—The sanitary works undertaken during the year were much the same in character as those executed in previous years. They consisted in sinking and repairing wells, construction and repair of tanks, latrines, drains, dust-bins, &c., and improvement of village sites, and water-supply generally.

Water Supply, Drainage, and Conservancy.—As usual, tanks, ponds, wells, rivers, springs, canals, &c. formed the sources of water-supply. The drinking water sources appear to have been better watched from pollution, and a great many tanks and wells were cleaned and deepened. The system of drainage underwent no change. It consisted chiefly of side cuttings to carry off rain water. There were in all 862 villages conserved during the year out of a total of 42,862 villages in the several districts. Of these, 272 are unions and 590 other villages. In the previous year 815 villages were conserved, of which 254 were unions and 561 other villages. Thus there was an increase of 47 towns. The largest number of villages conserved was in the Godávari district and the smallest in Nílgiris.

The total estimated receipts of the district for 1891–92 was Rs. 83,04,687 against 81,13,429 in 1890–91. Of this sum, Rs. 6,59,647 were allotted for sanitation, and the actual expenditure amounted to Rs. 3,62,620 or 54·9 per cent.

With the exception of Chingleput, Ganjam, and Nellore, the other districts have failed to utilise a fair share of the year's allotment.

General Remarks and Personal Proceedings.

I held the appointment of Sanitary Commissioner, and Surgeon-Major Dymott carried on the duties of Deputy Sanitary Commissioner throughout the year. All the 55 municipal towns in the Presidency were visited during the year. I inspected 27 municipalities and the Deputy Sanitary Commissioner 28. In addition to these 42 places were visited by the Deputy Sanitary Commissioner and 75 by me. The time I spent on inspection duty was 5½ months and by the Deputy Sanitary Commissioner five months. In the Appendices will be found two tables, one showing the names of municipalities inspected during the year, the dates of inspection, &c., and the other the names of the places visited. In my inspection of towns and villages it was my practice to go round with some of the native gentlemen of the place, and discuss with them various matters of sanitary interest, attention being especially drawn to the most prominent defects of the place under investigation at the time. I also took occasion to examine the birth and death registers, and, in doing so, to point out errors, to apply tests, to ascertain how far the registers were reliable, and urged especially upon municipal chairmen the great importance and value of such records. Although in many places registration of births and deaths is still far from accurate, yet there has been on the whole an improvement in the work during 1891. Whenever the monthly rates registered in a municipality are found to be low, or less than those registered in the neighbouring municipalities, or even of the district in which the municipality is situated, attention is called to the subject and explanation requested.

Although measures for the removal of sanitary defects in municipal towns are being introduced slowly, yet in some improvements have been and are being effected. It is certain that much of the large mortality which undoubtedly occurs year after year is due to causes which it is possible to remove, but it is equally certain that the complete removal of the causes must in any circumstances be a work of time and require a large expenditure of money.

The general and fundamental sanitary defects of municipal towns are (firstly) the unsatisfactory character of the water-supply and (secondly) the absence of an effective system for the disposal of sewage. The provision of a sufficient supply of pure drinking water is a matter of vital importance, not only to the towns themselves, but also to the neighbouring country or area influenced by them. Works for providing a sufficient and wholesome supply of drinking water for some of the towns are now being prepared. An improved system of water-supply will necessitate an improved system of sewerage. When water comes to be used by the people in adequate quantity, effective arrangements will be required for the removal of waste or soiled water, for, if the water be allowed to stagnate and sink into the soil after use, it will at once give rise to all the evils attendant on dampness of the soil and excite putrefaction of the excrements with which the soil of towns is saturated.

A practice which is very common in most of our towns is that of digging holes within or adjoining house sites for earth to repair or rebuild the house walls; and as these pits are afterwards filled with rubbish of sorts containing objectionable matter, the practice is fraught with danger to health and should be strictly forbidden. Owing, however, to its cheapness and convenience, the practice is one which commends itself to the people as both rubbish is disposed of, and the pits are filled up by one and the same action. It is simply adding to instead of lessening the filth of a town, and all excavations or pits which are made should be filled with wholesome material, and all rubbish removed out of the town. Until this is done there will always be pollution of the air as well as of the water in wells in the vicinity of pits filled up with filth.

During the year some progress has been made in improving sanitary arrangements in villages. Many tanks and wells have been deepened and cleaned out, and put in a much more satisfactory condition. So far as villages are concerned, the evils lie mostly on the surface, and what is really wanted in villages is chiefly to ensure the maintenance of a pure water-supply, to keep the wells clean, and to remove the rubbish to some distance from the village site.

The condition of the cow-houses in towns is still far from satisfactory, and large numbers of cows, buffaloes, and goats are kept at night in towns. The custom is a great evil, but it has become so ingrained in native feeling that its abolition must be a work of time. In many cases the cattle are stabled in the public streets at night, and this practice might be forbidden. The private yards where cattle are kept are, as a rule, extremely filthy. A remedy for the evils attendant on the keeping of great herds of cattle in towns would be for municipalities to erect cattle pens outside the towns and charge a remunerative fee for the accommodation of cattle at night.

With regard to sewage farming in this Presidency, there has been no change since last report, and it is carried on in very few places. In most towns there are no proper arrangements made for the termination of the open street drains, and in many cases the sewage either sinks into the ground or finds its way into any depression or nullah. As drainage schemes for towns progress there is no doubt that sewage will be largely utilized for irrigating and manuring purposes.

There were 454 places inspected in 1891 against 292 in 1890. Forty-one places were inspected more than once during the year. Many valuable suggestions were made by the district medical and sanitary officers, and I trust they will lead to the further improvement of sanitation in towns and villages.

ABSTRACTS OF REPORT OF THE SANITARY COMMISSIONER FOR BOMBAY FOR 1891.

(*Dr. C. W. Macrury.*)

General Population.

Vital statistics.

Comparing the numbers (16,454,414) of the former census, 17th February 1881, with those (18,857,044) of last, 26th February 1891, it is seen that an increase of 2,402,630 in the total population for the Presidency has occurred during the last 10 years.

As only the vital statistics of the native civil population of the Presidency are compiled (*vide* Government Resolution, General Department, No. 4674, dated 7th December 1872), the calculations are based on the population exclusive of Europeans and Eurasians, viz., 18,820,346.

In the Presidency of Bombay, including Sind, during the year 1891 there were 682,677 births registered against 641,115 in 1890. The recorded births for the year under report were thus 41,562 in excess of the number registered in the previous year, and exceeded the mean of the preceding 10 years ending 1890 by 118,077. By sexes there were 354,630 males and 328,047 females against 333,698 and 307,417 respectively in 1890.

The following table shows the number of births registered in each year from 1881 to 1891, their ratios per 1,000 of population, and the proportion of males to females:—

Years.	Population.	Number of Births Registered.			Ratio per 1,000 of Population.			In every 100 Births there were		For every 100 Male Births the Females were
		Males.	Females.	Children.	Males.	Females.	Children.	Males.	Females.	
1881	16,454,414	239,912	219,745	459,657	14·58	13·35	27·93	52·19	47·81	91·59
1882	16,454,414	255,927	235,419	491,346	15·55	14·31	29·86	52·09	47·90	91·98
1883	16,454,414	261,966	239,835	501,801	15·92	14·58	30·50	52·20	47·80	91·55
1884	16,454,414	278,986	255,737	534,723	16·96	15·54	32·50	52·17	47·83	91·67
1885	16,454,414	298,406	274,025	572,431	18·14	16·65	34·79	52·13	47·87	91·83
1886	16,454,414	303,376	278,177	581,553	18·44	16·90	35·34	52·17	47·83	91·69
1887	16,454,414	327,500	300,693	628,193	19·90	18·27	38·18	52·13	47·87	91·81
1888	16,454,414	330,316	304,377	634,693	20·07	18·50	38·57	52·04	47·96	92·15
1889	16,454,414	312,974	287,515	600,489	19·02	17·47	36·49	52·12	47·88	91·87
1890	16,454,414	333,698	307,417	641,115	20·28	18·68	38·97	52·12	47·88	92·14
Mean for 10 years	16,454,414	294,306	270,294	564,600	17·89	16·42	34·31	52·13	47·87	91·84
1891	18,820,346	354,630	328,047	682,677	18·84	17·43	36·27	51·95	48·05	92·50

The recorded birth-rate for the year was 36·27 per 1,000 of population against 38·97 in 1890. It is satisfactory to notice that some improvement in birth registration has taken place in several districts.

For every 100 female births 108·10 male births were recorded, but this proportion was greater in several collectorates and districts.

The number of births recorded in each district in 1891 was higher than in the previous year. It also exceeded the mean of the preceding 10 years ending 1890.

Of the 24 collectorates, the number of recorded births in 1891 was higher than in 1890 in all the collectorates, except Thána, City of Bombay, Kolába, Hyderabad, and Shikárpur. In the City of Bombay the recorded birth-rate for the year was only 18·86 per 1,000 of population against 19·79 in 1890, whilst the mean ratio for the last 10 years ending 1890 amounted to 19·70 per 1,000 of population. Due attention is apparently not given to the registration of births in this city. Out of 56 towns in the Presidency the City of Bombay occupies the fifth place from the bottom of the list.

The recorded birth-rates among the urban and rural populations of the Presidency were respectively 28·63 and 37·34 against 28·40 and 40·52 in 1890. Among the rural population of each collectorate, except Ratnágiri, Bijápur, Kánara, Karáchi, Hyderabad, Shikárpur, and Upper Sind Frontier, the birth-rates were higher than in the urban population. In 1890 the birth-rates amongst the rural population were higher than in the urban population in each of the collectorates, except Kánara, Ahmedabad, Karáchi, Hyderabad, and Thar and Párkar.

Out of 56 towns in the Presidency 16 had a birth-rate exceeding 40 per 1,000. In many towns, however, little attention appears to have been paid to the registration of births. For instance, in the town of Thána a birth-rate of 12·43 per 1,000 of population was recorded against 7·54 in 1890, in the town of Alibág a birth-rate of 14·27 per 1,000 was registered against 20·86 in 1890, and in the town of Umarkot 21·90 against 34·30. In the towns of Násik and Broach the recorded birth-rates were respectively 22·41 and 27·30 per 1,000 against 18·51 and 25·88 in 1890. Birth-rates, such as those of Thána 12·43, Kalyán 13·24, Alibág, 14·27, Mahád, 17·76, City of Bombay 18·86, and those returned by Umarkot, Násik, Nasirabad, and Panvel are absolutely valueless. These and other municipalities, which have returned apparently equally inaccurate birth-rates, cannot be supposed to have been attending to their duties properly, and I hope Government will be pleased to call the special attention of the authorities to the necessity of much greater attention being paid to this most important subject.

Among the civil population in the rural, town, and cantonment circles in the Presidency, 513,132 deaths were registered during the year 1891. In 1890, 463,616 deaths or 49,516 less than in 1891, were recorded. The following statement shows the number of deaths recorded in each year since 1881 :—

1881	- 381,450	1885	- 473,591	1889	- 518,562
1882	- 343,418	1886	- 381,185	1890	- 463,616
1883	- 420,198	1887	- 455,261	1891	- 513,132
1884	- 408,409	1888	- 468,039		

The year under report, as compared with 1890, was, therefore, on the whole, an unhealthy one.

Of the total deaths registered 267,282 occurred among males and 245,850 among females against 242,835 and 220,781 respectively in 1890.

The computed death-rate per 1,000 of population in 1891 was 27·26 against 28·18 in 1890, and a decennial mean of 26·22. Omitting Sind, where registration is defective, the recorded death-rate in the other parts of the Presidency amounted to 28·83 per 1,000 of population.

The recorded death-rate per 1,000 of population was higher than in 1890 in the collectorates of Khándesh, Násik, Thána, City of Bombay, Kolába, Ahmednagar, Poona, Surat, and Broach. In the collectorates of Ratnágiri and Bijápur the recorded death-rates (19·77 and 31·24 per 1,000 respectively) during the year were nearly the same as those for 1890 (19·20 and 31·46). In the remaining collectorates it was lower than in 1890. The recorded death-rate per 1,000 of population in 1891 was higher than the annual mean of the preceding 10 years in all the collectorates except Thána, Sátára, Belgaum, Dhárwár, Kánara, Kaira, and Hyderabad. The death-rates 29·54 per 1,000 of population in Sholápur, 30·11 in Surat, 21·50 in Panch Mahāls, and 17·66 in Thar and Párkar were nearly the same as those of the annual mean of the preceding 10 years (29·32, 30·47, 21·34, and 17·55 respectively).

In the City of Bombay, the recorded birth-rate was much below the registered death-rate. It was 18·86 and 29·15 per 1,000 of population respectively; the difference may be partly ascribed to defective registration of births. In the collectorate of Broach the recorded birth and death-rates were nearly equal—42·54 and 42·11 per 1,000 respectively. In all other collectorates the recorded birth-rates were higher than the registered death-rates.

The mortality amongst infants under one year and children above one year but under five was, as usual, very high in comparison with other periods of life. In fact, the deaths among children under five years of age formed 43·79 per cent. of the total deaths. The period of greatest immunity was in the age of above 10 and under 15, the rate being 6·81 per 1,000. The percentage on total deaths amongst infants under one year was 22·18 against 21·22 in 1890. For those above one and under five the percentage on total deaths was 21·61 against 21·55 in 1890. Among old people 60 and upwards the percentage on total deaths was 14·29 against 14·62 in 1890.

According to the census of 1891, the Mahomedan population numbered 3,501,910 persons, amongst whom, in 1891, 76,401 deaths were recorded against 72,307 in 1890, the death-rate being 21·82 per 1,000 of population against 23·27 in 1890. The Hindu population amounted to 14,897,629 persons, amongst whom 431,153 deaths, or 28·94 per 1,000 of population, were reported. In 1890 the total deaths amongst this race were 386,095, equal to a death-rate of 29·41 per 1,000 of population. Amongst the Christian population, numbering 122,089 persons, 2,433 deaths were reported during the year against 2,270 in 1890, the death-rate being 19·93 against 16·41 per 1,000 in 1890. Under the heading "Other castes" are included all those not belonging to either of the above sects, who by the census of 1891 numbered 298,718 persons, amongst whom during 1891 there were 3,145 deaths against 2,944 in 1890, the death-rate being 10·53 per 1,000 against 36·65 in 1890. Among Mahomedans the maximum death-rate during the year (36·68 per 1,000) which is nearly the same as that of the City of Bombay (38·20 per 1,000), took place in the collectorate of Násik, and the minimum (14·34 per 1,000) which is nearly the same as that of Hyderabad (14·85 per 1,000) in Upper Sind Frontier. In 1890 these rates were 39·77 and 13·59, and were reported as having occurred in Ahmedabad and Thar and Párkar. Amongst Hindus the maximum death-rate (46·83 per 1,000) in 1891 was in the collectorate of Broach and the minimum (19·10 per 1,000) in Hyderabad. In 1890 these rates occurred in Ahmedabad and Ratnágiri, 41·14 and 19·08 per 1,000 respectively. The maximum death-rate during the year amongst Christians was 36·14 and was reported from the Shikárpur collectorate, and the minimum (10·12) from Amednagar. In the collectorates of Broach, Panch Maháls, Hyderabad, and Thar and Párkar, no deaths amongst Christians were reported in 1891.

The subjoined table shows the deaths in 1891, arranged according to the specified causes laid down by the Government of India, and contrasted with the results for 1890 and the mean of the preceding 10 years. The causes of deaths will be briefly noticed in the next section:—

Causes of Death.	Mean for 10 Years, 1881–1890.		1890.		1891.	
	Number.	Ratio per 1,000 of Population.	Number.	Ratio per 1,000 of Population.	Number.	Ratio per 1,000 of Population.
Cholera	21,170	1·29	3,259	0·20	17,850	0·95
Small-pox	5,087	0·31	2,877	0·17	1,491	0·08
Fevers	296,021	17·99	344,897	20·96	368,913	19·60
Dysentery and diarrhœa	38,395	2·33	36,037	2·19	37,728	2·00
Injuries	5,781	0·35	5,883	0·36	5,887	0·31
Other causes	64,921	3·95	70,663	4·30	81,263	4·32
All causes	431,375	26·22	463,616	28·18	513,132	27·26

The recorded death-rates among the urban and rural population of the Presidency were respectively 29·45 and 26·96 per 1,000 of population against 29·80 and 27·96 in 1890.

Chief Diseases.

Cholera.

During 1891 cholera caused 17,850 deaths throughout the Presidency, or 14,590 more than in the preceding year and 14,581 less than in the year 1889. The epidemic was most prevalent in the Bijápur, Sholápur, Poona, and Ahmednagar collectorates, where 5,064 or 6·36, 2,442 or 3·25, 2,316 or 2·18 and 2,284 or 2·57 deaths per 1,000 of population respectively took place; whilst the minimum mortality occurred in the Broach, Shikárpur, Kánara, and Panch Maháls collectorates, in which there were 1, 6, 17, and 22 deaths respectively registered.

In January cholera broke out in 11 collectorates and caused 256 deaths. In February the disease prevailed in 7 collectorates, causing 149 deaths, and ceased in 4 collectorates, namely, Násik, Poona, Belgaum, and Bijápur. In March 63 deaths were returned from 4 collectorates, the monthly minimum for the year. In April the disease somewhat increased and caused 214 deaths in 6 collectorates. In May 1,315 deaths were registered from 7 collectorates. In June it assumed a still greater intensity, and no less than 2,656 deaths were reported from 9 out of the 24 collectorates in the Presidency. In July the disease appeared to have assumed an epidemic form,

as 3,692 deaths were registered in 11 collectorates. During August the mortality rose to 4,443, the maximum for the year; the disease was present more or less in 13 collectorates. In September there was a slight decrease, 3,427 deaths in 14 collectorates. In October and November it rapidly subsided, as there were 901 deaths in the former and 414 in the latter. In the last month of the year the disease was only present in 6 collectorates, and 320 deaths were reported. During 1891 Surat, Kaira, Hyderabad, Thar and Párkar and Upper Sind Frontier were free from cholera.

The death-rate attained the high ratio of 6·36 per 1,000 of population; in Sholápur there was also a high death-rate, namely 3·25 per 1,000; whilst in the Ahmednagar, Poona, Khándesh, and Násik Collectorates the ratios were 2·57, 2·18, 1·35, and 1·15.

Out of the 25,143 villages in the Presidency, 1,594, or 7·79 per cent., were affected by cholera. The highest percentage occurred in the Bijápur collectorate, where out of its 1,110 villages, 434, or 39·10 per cent., were affected. In Sholápur, Poona, and Ahmednagar, the percentages were 30·15, 15·59, and 13·16 respectively. In the remaining 12 collectorates the rates were below 10 per cent.

Small-pox.

During 1891 there were 1,491 deaths from small-pox (747 males and 744 females) against 2,877 in 1890 and a decennial mean of 5,087.

In the Western Registration District small-pox attained a ratio of 0·15 per 1,000 against 0·20 in 1890 and a decennial mean of 0·41. In the Southern Registration District the ratio was 0·11 against 0·30 in the previous year and 0·48 the decennial mean. In the Central Registration District it was 0·05 against 0·08 in the previous year and a decennial mean of 0·24. In the Gujarát and Sind Registration Districts the ratios per 1,000 of population were respectively 0·04 and 0·02 against 0·13 and 0·19 in the previous year and a decennial mean of 0·13 and 0·27. In collectorates the highest death ratio (0·24) took place in Khándesh and the lowest (0·00) took place in Ahmednagar, and (0·01) in Sholápur, Ahmedabad, and Shikárpur. The districts of Thar and Párkar and Upper Sind Frontier were free. The Presidency rate was 0·08 against 0·17 in the previous year and 0·31 the decennial mean.

Of the total deaths from small-pox 27·50 per cent. occurred among infants under 1 year of age, whilst 50·17 per cent. took place among children over 1 and under 12, the remaining 22·33 per cent. being among persons over 12 years of age.

Fever.

During 1891, 191,735 males and 177,178 females, or a total of 368,913 persons, were reported to have died from fever against 344,897 in 1890, showing an increase of 24,016 deaths for the year, the mean for the previous 10 years being 296,021.

According to districts the Gujarát Registration District fever caused a lower mortality (27·62 per 1,000) during the year against 29·54 in 1890 and the decennial mean 24·20. In the Western Registration District the death ratio was 20·97 against 18·32 in the previous year and 17·98 the decennial mean. In the Central and Sind Registration Districts the respective ratios for the year were 18·11 and 17·07 against 19·41 and 19·68 in the previous year and 17·18 and 15·18 the 10 years' mean. In the Southern Registration District the ratio for the year was 14·65 against 19·55 and 15·35 the previous year and the 10 years' mean respectively. In 10 collectorates out of 24 the fever death-rate was higher than that of the previous year. The collectorate of Broach heads the list with the very high ratio of 37·30 against 33·78 in 1890 and 29·20 in the previous 10 years. In the following collectorates high death ratios occurred:—Ahmedabad 31·44, Khándesh 27·21, Násik 25·95, Surat 25·35, Kaira 24·17, Panch Maháls 20·17, and Shikárpur 20·17,—the Presidency rate being 19·60 against 20·96 in the previous year and 17·99 the decennial mean.

In January and February and from May to December the deaths from fever were both above the mean of the corresponding months in the previous year. In March and April the deaths were below the previous year, but they were above the mean. The maximum mortality from fever took place in December, when 50,954 deaths were reported, and the minimum in June, when 25,628 deaths were recorded from this cause. A certain proportion of the mortality may be attributed to influenza.

Dysentery and diarrhœa.

During 1891 dysentery and diarrhœa caused the deaths of 20,663 males and 17,065 females, or a total of 37,728 persons against 36,037 in 1890, and a decennial mean of 38,395.

The Southern Registration District heads the list with the high ratio of 4·55 per 1,000 against 5·32 in 1890 and 4·51 the decennial mean. The Western Registration District comes next with a ratio of 2·78, the Central Registration District 1·78, the Gujarát Registration District 0·23, and Sind Registration District 0·15. In the Presidency the rate was 2·00 against 2·19 in the previous year, and a decennial mean of 2·33. Excepting in the collectorates of Khándesh, Násik, Kolába, Ahmednagar,

Panch Maháls, Thar and Párkar, Upper Sind Frontier and the Town and Island of Bombay the death-rate for the year was lower in all the collectorates. The highest ratios recorded were in Belgaum 5·69, Dhárwár 4·82, Bijápur 4·71, Khándesh 4·22, and Násik 4·18, and the lowest in Thar and Párkar and Shikárpur 0·07, and in Hyderabad 0·04.

During the year from January to April and in July and November the deaths from dysentery and diarrhœa were less than in 1890, but greater in the months of May, June, August, September, October and December. The maximum mortality occurred in September, and the minimum in February.

Injuries.

During 1891, 3,430 males and 2,457 females, or a total of 5,887 persons met with violent deaths. The mortality from these causes exceeds only by four that reported in 1890, when 5,883 deaths were recorded. Of the 5,887 deaths, 2,489 happened from drowning, 1,240 resulted from snake bites, 601 from wounds, 192 from hanging, 117 from poisoning, 92 from attacks by wild beasts, and 1,156 from causes not specified.

Other causes.

The recorded deaths from causes other than those specified number 81,263, of which 41,467 occurred among males and 39,796 among females. The total for 1890 was 70,663. There is a decrease of 10,600 under this head.

Sanitary Works—Military and Civil.

All available information under these sections has been thrown into a tabular form, and will be found in Appendices Nos. III. and IV., as directed in paragraph 5 of Government Resolution No. 3,393, General Department, dated 28th September 1888.

Personal Proceedings and General Remarks.

The important suggestions and recommendations made by the Army Sanitary Commission regarding information to be given in annual reports referred to in Government Resolution, General Department, No. 4416, dated 22nd December 1891, have received my most careful attention and consideration.

The cholera map has been reconstructed as much as possible on the lines laid down by the Army Sanitary Commission in paragraph 25 of memorandum No. 2, and more definite information is given in the tabular statements of sanitary estimates of towns consequent on an alteration in the form.

As regards the disposal of night-soil, shallow trenches and cultivation would undoubtedly be preferable to deep pits, but the difficulty is to secure a sufficiently large area near municipal towns, which the trench system demands. Deep pits are recommended on grounds of *economy only* where land is expensive and comparatively little demand for manure exists, as is the case at Násik, Sholápur, and other towns.

So far as my experience goes, the cause of sanitation has not in any way profited or prospered under local self-government. On the contrary, several towns have of late appeared to me to be growing more apathetic concerning this subject, which does not seem to be popular or fashionable at Congress meetings, although its importance demands that it should occupy the serious attention of the leaders of all such gatherings; for what can be of greater interest and importance than the health of the public, which has always been acknowledged to be "*suprema lex*"?

Shipping and Health of the Port.—A summary of the shipping and health of the Port will be found in the following table:—

Vessels including Native Craft.	Number.	Number of Passengers as far as is known.	Number of Vessels inspected.	Number of Persons, including Crew, inspected.	Number of Vessels disinfected.	Number of Persons vaccinated.	Diseases and Number of Cases of each.								Number of Boats with foul or rotten Cargo.
							Cholera.	Small-pox.	Measles.	Scarlatina.	Leprosy.	Chicken-pox.	Bovine Disease.	Equine Disease.	
Entered - - -	45,228	418,160	25	20,961	6	919	5	4	11	—	—	3	—	—	6
Left - - -	37,333	360,219	722	82,048	2	32	—	3	—	—	—	—	—	—	—
In harbour including population -	1,455	22,142	22	—	22	49	43	5	—	—	—	—	—	—	10
Total - -	84,016	800,521	769	103,009	30	1,000	48	12	11	—	—	3	—	—	16
Total, 1890 -	87,316	723,377	651	70,851	21	1,408	4	14	13	—	—	1	—	—	5

Infected Vessels.—The actual number of ships which arrived with infectious disease on board is given in the following table :—

Class of Vessel.	Number of Ships.	Total Number of Crews and Passengers.	Diseases and Number of Cases of each.							Suspicious Cargo.
			Cholera.	Small-pox.	Measles.	Scarlatina.	Chicken-pox.	Bovine Disease.	Equine Disease.	
1. Troop-ships -	2	1,844	—	—	11	—	3	—	—	—
2. Pilgrim ships -	3	1,989	5	3	—	—	—	—	—	—
3. Other vessels -	1	273	—	1	—	—	—	—	—	—
4. Vessels with suspicious cargo (East African hides from ports).	6	72	—	—	—	—	—	—	—	6
Total - -	12	4,178	5	4	11	—	3	—	—	6
1890 - -	17	10,358	—	13	13	—	1	—	—	5

The measles cases on board of Her Majesty's Indian troop-ships were landed and isolated in the military cantonment at Colába. The pilgrim ships with small-pox cases were detained until the pilgrims and crew were vaccinated, and the vessels thoroughly disinfected.

Bills of Health.—The following table shows the total number of vessels bound for all quarantine ports which were inspected and granted Form B. Bill of Health :—

No.	Class.	Number of Vessels.	Tonnage (Net).	Total Number of Crews, Passengers, Pilgrims, and Troops.
1	Square-rigged vessels and steamers - -	520	945,623·08	42,951
2	Native craft - - - -	162	20,130·81	4,071
3	Pilgrim ships - - - - -	21	25,565·43	15,524
4	Her Majesty's Indian Troop and Marine ships -	19	83,140·50	19,502
	Total 1891 - - -	722	1,074,459·82	82,048
	1890 - - -	646	851,166·55	75,899

In addition to the above, Form C. Bill of Health was issued to 542 vessels. The total bills of health issued, including Form B., were 1,264 against 1,130 in the year 1890.

Quarantine.—During the year Suez imposed quarantine against Bombay arrivals from the 28th September to 15th October; this was due most probably to the outbreak of cholera on board of Her Majesty's ships "Marathon" and "Redbreast," which took place about that time.

Some of the Steam Navigation Companies complain, that notwithstanding a clean Government bill of health issued in Bombay, the Company's steamers sailing to Bussrah have to undergo a six days' quarantine there if they are not provided with certified medical officers. If a medical officer is carried the steamers are still subjected to 24 hours' observation. This quarantine is imposed in face of the fact that the bill of health granted to steamers leaving this port declares that there is no epidemic disease prevailing in the city and suburbs of Bombay. At Mauritius also quarantine is frequently needlessly imposed.

Treatment of Pilgrims at Camaran.—The pilgrim ship "Sculptor," which left Bombay on the 22nd April with 789 passengers, had, during the voyage between Bombay and Aden, four cases of small-pox, one of whom died and the remainder were landed at Aden. When the ship arrived at Camaran the pilgrims disembarked on the 2nd May to undergo the usual but unnecessary 10 days' quarantine insisted on by the Turkish authorities before they are allowed to land at Jeddah. While in the quarantine sheds at Camaran, and not on board ship, cholera broke out, and 20 pilgrims died. The pilgrims complained bitterly of the treatment they received at Camaran. They state that the Camaran authorities put them next to or in the sheds which were occupied by the cholera-infected pilgrims of the S.S. "Deccan," of the year 1890, that there was no medicine available on shore, that the water was brackish and undrinkable, and the place filthy—conditions eminently favourable for the development

and spread of epidemic disease amongst a class of people not remarkable for the observance of the rules of personal hygiene.

Medical Inspection of Passengers and Pilgrims.—The medical inspection of all passengers and pilgrims for European, Red Sea, and quarantine ports is most strict. No ship bound for any of the above ports is granted a bill of health until the crew and every person on board are seen by the Health Officer, who satisfies himself that they are free from infectious disease.

The Health Officer pointedly brings to notice, that although rigorous rules are enforced in Bombay, M. Henry Monod, the Director of the Assistance Publique and of the Department of Public Hygiene in France, and other writers persist in stating that no precautions are taken at Indian ports, that the medical inspection of pilgrims is permissive and not compulsory,—in fact, that pilgrims are never examined, and as a result that cholera is introduced into Jeddah, and in support of their statement give the S.S. "Deccan" and S.S. "Sculptor" as instances.

The Health Officer states that the "Deccan" and "Sculptor" are the only two cases which can be quoted against India for a number of years. But the pilgrims on board the S.S. "Deccan" never reached Jeddah. They were quarantined on shore at Camaran in July 1890 for 26 days, and as cholera did not cease they returned to India. The disease at the time was raging in Mecca, having previously broken out among a caravan of pilgrims from Damascus. In the case of the S.S. "Sculptor" in 1891, the pilgrims were undergoing the usual 10 days' quarantine, insisted on by the Turkish authorities, in the insanitary lazaretto sheds on the shore at Camaran when cholera broke out among them. As they did not proceed to Jeddah, but returned to India from Camaran, neither the "Deccan" nor the "Sculptor" can be blamed in any way for the spread of cholera among the pilgrims at Mecca.

The Health Officer states that he believes that when cholera reached Europe it had its starting point in Arabia, and as the question is one of international importance it would be well if the Egyptian Board of Health, with whom should be associated an Indian medical officer, directed their attention to the sanitary condition of the Haj cities, more especially Camaran, El Tor, Jeddah, Mecca, and Medina.

Foreshore.—The general sanitary condition of the foreshore has been improved to a certain extent by portions of it being railed off to prevent nuisances being committed.

Arthur Basin.—Arthur Basin has improved considerably owing to the cessation of the discharge of the tramway stables drain, except at high water, but the Port Trust authorities should insist on the tramway company extending the discharge pipe from their stable through the basin to below low-water mark, so that the outfall should always remain submerged,

Colába Night-soil Depôt.—The discharge of night-soil into the harbour from the Colába Depôt at all states of the tide still continues, although attention has been drawn to the subject repeatedly.

Victoria Boat Basin.—The Victoria Boat basin and the foreshore up to the Gun Carriage basin are in a foul condition. Part of this foreshore, which is the property of the Colába Land and Mill Company, is in a most filthy state, and the Company should be compelled to erect latrines for their workpeople.

Back Bay.—The Health Officer draws special attention to two places in Back Bay, viz., a drain situated to the north of Colába Pársi Sanitarium, close to the new block of buildings erected by Government. It discharges on to the sand a most foul smelling black liquid. The other, a sewer, which discharges into Back Bay, close to the Marine Lines Station. This sewer is an offshoot of the one which runs through the Marine Lines and Queen's Road, and not supposed to discharge sewage matter, unless when the main drain gets damaged or blocked from deposit. Nearly all the night-soil from the Marine bungalows finds its way into the main drain and frequently into Back Bay.

ABSTRACT OF REPORT OF THE CALCUTTA MUNICIPALITY FOR 1891–92.

(*Mr. H. Lee, Chairman.*)

Drainage.—Mr. Baldwin Latham's Report and Mr. Kimber's Note on it led to a prolonged and somewhat intricate correspondence between these two Engineers, which has but now reached a stage in which it can be considered by the Commissioners. The points of variance are of such importance, and so surrounded with technicality, and such large sums of money are involved, that, in my opinion, it may be found necessary for the Commissioners to invoke the aid of outside experts to advise them in coming to a decision.

But it is pretty certain that no actual works can be commenced yet, for Mr. Kimber agrees with Mr. Baldwin Latham, and the Commissioners are not likely to disagree, when he says :—

"In my judgment no work ought to be undertaken in reference to the surface water scheme, or sewerage works in connexion with Calcutta or the Added Area, until proper tidal observations and surveys have been made, and the various matters referred to in the reply to the notes have been ascertained, for if you do proceed with these works without such information, it would be very much like shooting in the dark."

Pollution of sub-soil.—On one important matter the Health Office and the Engineer have for years differed, and they do not even now thoroughly agree. Dr. Simpson has always maintained that the older sewers of Calcutta are continually polluting the sub-soil. Mr. Kimber has as steadily denied that this is the case: here and there a pipe might be out of order, and be the source of pollution for a few feet round it; but such were very rare exceptions to the general rule, which is that the sewers drain away the sub-soil water, and do not pollute the sub-soil at all.

Mr. Baldwin Latham's report is strongly confirmatory of Dr. Simpson's contention. He observed that "sewers like the Calcutta sewers, that are likely to be gorged with "mixed sewage and rainfall, must let the sewage out into the sub-soil, which becomes "a reservoir for its reception when the flow increases in the sewers. This constant "interchange of sewage, rainfall, sub-soil water, and tidal water between the sewers "and the ground is, in my judgment, extremely prejudicial to the health of the in- "habitants of Calcutta." And again "all pipe sewers should be jointed with tarred "gasket and Portland cement mortar, and not with clay, or a mixture of clay and "Portland cement; the clay being a material liable to considerable shrinkage if it dries, "and if it does not dry, then it remains soft and plastic, and the weight of the earth "filling of the sewer trench squeezes out the lower part of the jointing material, "leaving an opening at the upper part of the pipe joint through which sub-soil water, "earth or sand may enter the sewers, or when the sewers are overcharged, the sewage "may escape into the sub-soil."

Finally he remarks :—

I have very carefully looked through the health statistics of Calcutta for some years past, and have perused the carefully prepared and exhaustive reports of Dr. Simpson, your Medical Officer, and I regret to find that it appears from the figures, and from the reports of your medical staff from so long a period ago as 1874, and up to the present time, that the attention of the authorities of Calcutta has been directed to the enormous good that has resulted from the supply of good water to the city, but on the other hand, their testimony has been against any improvement having been secured by the works of sewerage. After inspecting these works of sewerage, and ascertaining the state of affairs, to which I have drawn your attention, I should have been surprised if any sanitary advantage could have arisen from such works, but I am clearly of opinion, as I am of my own existence, that with a proper system of sewerage in Calcutta, the benefit would be as certain as those which have arisen from the supply of good water, and when the defects in the present system of sewerage now pointed out are remedied, you may rely upon securing the good results to health which have followed in every town, to my knowledge, that has been sanitarily drained.

Quotations from works of first rate authority were adduced before me to show that the soil must be contaminated from such sewers as our older ones, and that in every part of the world where sewers jointed like them have been laid, the sub-soil has been

contaminated. On the other hand I was shown the anonymous writings of a contributor to an engineer's periodical, maintaining that there could be no such contamination, and that as a matter of fact in Calcutta there was none.

The question, whether or not the sewers do pollute our subsoil, seemed to me one that any body possesssed of a little patience could easily settle for himself. Accordingly on the 26th April 1892 I examined for three hours, with the utmost care, three sewers that had been partially stripped for me beforehand, in the north part of the town. I then had many of the joints entirely bared, together with several connexions from the neighbouring houses. I took full notes of all that I observed, and collected specimens of the earth and water surrounding the sewers, and of the contents of the sewers themselves, and had the specimens analysed. Again on the 30th April I repeated my observations, for two hours visiting four other sewers, besides re-examining two of the three that I had visited on the 26th. Finally, with the sanction of the Commissioners, I had 30 wells sunk in different parts of the city, three at different parts of the maidan which is unsewered, and the rest at intervals of from two to 40 yards from the nearest sewers, and had the water from many of them analysed.

The actual facts thus established are, that the older sewers of Calcutta do pollute the subsoil in their immediate neighbourhood, but the area of contamination remains still to be determined. My observations did not go to show that the newer sewers do at all pollute the subsoil, but on the contrary, the only two sewers laid within the last nine years, one in the 1883 and the other in 1886, that I examined were found to be well laid and thoroughly water-tight. I have also watched the laying of very many pipes for the last two years, and they have all been properly jointed. All pipes that have been laid since Mr. Baldwin Latham wrote his report, have been jointed in the manner recommended by him.

It seems to me that I should be wanting in my duty if I did not here record my conviction, that it will be henceforth the duty of the Commissioners to set aside yearly a considerable sum of money till they have cemented all the joints of all the old sewers.

It has been objected that such a course would inevitably raise the level of the sub-soil water. That may be so or not. I have given considerable attention to the point, and am by no means convinced that such would be the result. But whether the sub-soil water is raised or lowered thereby, there can be no doubt that the joints of the old sewers, like the joints of the new, should be water-tight.

Sanitary zeal.—The subject of securing, at a cost of about Rs. 6,000, the services of the renowned sanitary engineer, Mr. Baldwin Latham, to report upon the drainage of the city was touched upon in last year's report. A similar step to obtain "more light" was taken by the Commissioners this year, when they determined to depute their Health Officer to England to attend the International Congress of Hygiene, and to visit the various cities and towns of England in which refuse is burnt. I wish particularly to congratulate the Commissioners on the sanitary zeal of which these two decisions are striking evidence.

Quarantine.—The paper on cholera that Dr. Simpson read before the Congress in London was well received, and cannot fail of its effect. In it he proved conclusively that Calcutta is not, and cannot be the source of cholera imported into Europe, and that "if Mecca and Jedda were once recognised as the principal and most dangerous "centres of cholera so far as Europe is concerned, and as the only probable source of "importation of cholera by sea, a great boon would be conferred on the maritime "trade between Europe and the East, which is at present so often hampered by "unnecessary detentions and restrictions imposed by quarantine."

Incineraiors.—The memorandum that he prepared on the Incineration of Refuse will be found quoted in full in his report for this year. It is complete in all respects, and lucid as his reports always are. It was chiefly owing to the facts and arguments adduced in this report that a contract was entered into with Mr. Harrington for the erection of a new and improved incinerator for the destruction of suburban refuse. The site chosen is on the southern boundary of the municipality, between the docks, and near the Diamond Harbour Road. The incinerator is at the present moment all but completed, and will be in full working order by the middle of July.

When the system of incineration becomes general throughout Calcutta, as it certainly will be some day, the financial relief to the ratepayers will be considerable, whilst the sanitary benefits will be simply inestimable. All the filth that is now transported at the cost of about one lakh of rupees a year to poison the air at a short distance from

Calcutta, will then be converted at no greater cost into wholesome and valuable ashes. One of the most eminent members of the medical profession (Sir Spencer Wells, Bart., F.R.C.S.) addressing the Calcutta Medical Society on the 5th of January 1892, said:—

I did not know before I came to India, but I have learned within the last few days, that tetanus is far more common here than in Europe. Two years ago, my friend Dr. O'Brien, of Darjeeling, formerly Health Officer for Calcutta, asserted at one of the meetings of the Corporation, that in this city more deaths occur in a single year from tetanus than in the whole of England in a similar time, or in the whole of Scotland in ten years. He said that in the previous ten years nearly 12,000 people had died of tetanus in this city, and that it was beginning to rival cholera in the mortality which it causes. Infants appear to be peculiarly liable to tetanus. The infant mortality in the ten years 1881–90 from this disease almost equalled that from all other infantile diseases added together. Your present Health Officer, Dr. Simpson, informs me that although every case reported in 1890 has been visited by a Medical Inspector, and all doubtful cases eliminated and placed to the account of other causes, yet 512 infants died of tetanus in Calcutta in 1890. Dr. O'Brien (impressed by Pasteur's demonstration of the microbic origin of the disease, and the fact that it shows a remarkable tendency to appear near the tanks or marshes or salt lakes polluted by daily additions of the refuse of the city) used this among other grounds for attempting to improve the present mode of disposal of the refuse, advocating strongly its cremation or incineration. A report on the incineration of refuse by Dr. Simpson is to be considered by the Corporation next week. I visited the Incinerator in Circular Road this morning with the President, Mr. Lee, and with Dr. Simpson, and feel sure they are right in believing that with a well-constructed furnace and chimney all the smoke and offensive vapour (which led to the temporary disuse of the refuse destructor) may be completely burned up before they escape at the top of the chimney. In London, close to Waterloo Bridge, in the midst of a crowded population, eighty tons of city refuse are destroyed every day. It is only when the stokers are careless that anything visible escapes from the chimney, and nothing offensive annoys the neighbours. I sincerely hope the Corporation will at once support their President and Health Officer in their praiseworthy efforts to improve the health of the inhabitants of Calcutta and the suburbs, by safely destroying by fire every day all the refuse of the population. I quite agree with Dr. O'Brien in his assertion that "it would be impossible to conceive anything more shocking or more insanitary than the present method of disposal of the refuse of the city." Just think of scattering 60 huge waggon loads of street sweepings, offal from slaughter-houses, decaying animal and vegetable matter—25,000 cubic feet of putrescent filth—upon the marshes of the Salt Water Lakes, which closely border the city to the eastward and the densely populated suburbs leaving the filth to ferment under the heat of a tropical sun! Can anything be more likely to cause some terrible pestilence than the conservation of such a factory of poisonous malaria, ready to be blown by prevailing winds towards the homes of the inhabitants? Is it not wonderful that filth-fevers are not more prevalent? Is not Dr. O'Brien probably right in his belief that the germs of tetanic microbes are so preserved and cultivated and spread?

Attention is invited to that portion of the Engineer's Report which describes the completion of the new pumping station at Bhowanipore. The works which, including the street piping, having cost the Commissioners approximately 15 lakhs of rupees, are the most perfect of their kind, and it will be seen that they have been carried out with marked energy.

The engines are the manufacture of Messrs. J. Simpson and Co. and are thus described in a professional periodical.

The engines are direct-acting triple expansion condensing horizontal Worthington engines, and they differ from any existing pumping engine, inasmuch as there are no fly-wheels, crank-shafts, connecting rods, or any other of the extra gear necessary for the efficient working of all rotary engines. These engines are arranged so that one engine in advancing moves the valves of the other by means of a single lever linked to the piston rod. The movements of the pistons and plungers are simply backwards and forwards; as one is just coming to rest the other begins to advance, the water column is never allowed to come to rest; the speed is constant; the flow of water absolutely uniform, and the stillness of the engine room is only disturbed by the sharp hiss of the exhaust steam as it rushes into the condenser. What we are particularly struck with is the smallness of the foundations and engine house required, as we are used to seeing pumps and rods attached to ponderous beams, supported on foundations disappearing to a vast depth, and the absence of all vibration either in the foundation or in the mains. It seems marvellous that such a plant as that at Bhowanipore should be capable of delivering 13 million gallons per day.

New Roads.—Harrison Road.—At the time that I write, the magnificent road is practically completed that the Commissioners have been engaged upon for the last three years, running in nearly a straight line through the heart of the city from the Hooghly Bridge to the Sealdah Railway. It has but lately been named the Harrison Road in commemoration of Sir Henry Leland Harrison, Kt., who was for nine years Chairman of the Corporation, and whose recent and sad death Bengal deplores. I have already described the principles that guided the Commissioners in acquiring the land, constructing the road, and selling off surplus land. In the course of the year the Commissioners entered into a contract with Messrs. Laing and Wharton to light the

road throughout with electricity, and we expect to see the lights burning this month (July 1892). The system to be adopted is nearly uniform with that followed by the same firm in the lighting of the Hooghly Bridge. The dynamos are placed at the Halliday Street Pumping Station, which bisects the road. The cost of installation will be Rs. 91,885. If to the interest on capital outlay we add a yearly charge of, say Rs. 2,470 for maintenance, working, and establishment, we see that the cost is but slightly in excess of what would have been the cost of a complete system of gas lamps, for the road is over 1½ miles in length, and clusters of gas lamps would have been needed at all the most important crossings. The charge for each gas lamp would have been Rs. 54 or 60 yearly, according to the terms arranged with the Gas Company.

Acting under the advice and with the kind assistance of Dr Prain, of the Botanical Gardens, an avenue of mahogany trees has been planted on the two sides of the road. As the mahogany is a slow growing tree, we have also planted an avenue of gold mohurs which will serve as nurses to the young mahogany trees, and will afterwards be removed.

Another fine new road that has been completed is the extension of Lansdowne Row to Beltala Road, which it meets not far from the Ballygunge Circular Road. It has cost about Rs. 1,13,014.

Other large new roads are in contemplation, and several most useful roads, though not broad or long, have been or are being constructed in various parts of the city and suburbs.

Improvement of the Suburbs.—In the Resolution on last years Report, his honour the Lieutenant-Governor expressed his wish that the manner in which the Commissioners discharge their statutory obligation to expend a sum of not less than 3 lakhs of rupees annually on the improvement of the suburban area added to Calcutta by Act II of 1888, should be prominently brought forward. The question has from the beginning been debateable just what expenditure is debitable to this charge of 3 lakhs and what is not. The Commissioners, therefore, apointed a Special Committee, at the beginning of the year now under review, to report on the principles that should be held to apply, and to prepare a statement of the accounts of the fund up to the 31st March 1891. The Committee which consisted, under my presidentship, of Sir Henry Harrison, Baboos Kallynath Mitter, Nolin Behary Sircar, Norendro Nath Sen, Priyanath Mullick, and Lal Behary Bysick, submitted the report and statement of accounts which appears amongst the Appendices, but when these came before the Commissioners in meeting certain legal points were raised which the Commissioners decided to refer to Counsel for opinion. In this form the matter is still pending. Meantime I have had prepared a statement of accounts for 1891–92 on the same lines as the previous statement, and I add that to the Appendix, thus bringing the matters up to date. Last year we spent on new and important works in the suburbs Rs. 8,51,071, viz. :— on the extension of the water supply pipe, Rs. 2,94,422, on Bhowanipore pumping station, Rs. 2,71,078, on the making of a fine road in extension of Lansdowne Row, Rs. 1,13,014, on a similar road east of the Bhowanipore pumping station, Rs. 15,684, on a smaller road south of the station, Rs. 10,187, on hackney carriage stand, Rs. 8,050, on Dhobeekhannah, Rs. 25,162, on survey for drainage of suburb, Rs. 22,757 on the drainage of the fringe area between the Circular Road and the Circular Canal, Rs. 29,447, on drainage of Russa Road, Rs. 2,962, towards the cost of the new Incinerator at Goragatcha, Rs. 9,800, and on the other petty improvements, Rs. 53,384.

Town Improvements.

This subject may be conveniently treated of under six heads, viz :—

(1.) Structural improvements of bustees in Calcutta.
(2.) Bustees in the added area.
(3.) Water-supply to bustees.
(4.) Latrines and urinals.
(5.) Obliteration of foul tanks and wells.
(6.) Structural improvements in the streets of the town.

Structural improvements of bustees in Calcutta.—So far as the expenditure is a guide, this work has been pushed on during the year with considerable energy. The Commissioners are pleased to be able to record a better out-turn of work under this head than in any previous years since the improvement of bustees was first taken in hand in 1882–83.

It will be seen from the annual report of 1890–91, page 8, that the balance available for bustees and structural improvements for 1891–92 was Rs. 87,815-7-2. The

Commissions, however, instead of bringing forward this amount to carry out the improvements of the year, as was hitherto done, sanctioned the following amounts on this account :—

(*a.*) Bustee improvements, Rs. 1,00,000.
(*b.*) Latrines and urinals, Rs. 14,000.
(*c.*) Latrines and bathing platforms, Rs. 10,000.
(*d.*) Contribution on account of petty town improvements from General Revenue, Rs. 30,000, making a total of Rs. 1,54,000 available for bustee and town improvements during the year.

The expenditure actually incurred and adjusted in the accounts has been :—

	Rs.
Town improvements	36,102
Acquisition of land for roads	32,601
Construction of roads	72,281
Construction of bathing platform	7,662
Compensation for removing huts	7,819
Tank-filling	17,321
Construction of squares	67
Latrines and urinals	10,083
Contingencies	7,399
Total	1,91,335

Filtered water supply to bustees.—Every impure well and foul tank in a bustee filled up by order of the Commissioners has increased the demand on the filtered water supply and made it more incumbent on the Commissioners to do what they can to replace the impure by pure water in bustees. For a short time the supply of filtered water to bustees was disallowed, but after a full and deliberate consideration, the Commissioners came to the conclusion in the course of the year that such a prohibition was both unjust and unwise, and should be abandoned in favour of a liberal policy. They now allow connexions on certain scales which has been freely taken advantage of with satisfactory results.

It was also decided that permission should be given to bustee-owners, to construct covered reservoirs for filtered water, provided with automatic ball-cocks. The boon would be immensely appreciated by the tenants, who being men for the most part, who get back home after their day's work late in the evening, find the pressure gone from the main, and would be greatly relieved to know that there was always a fresh supply of pure water waiting for them in the reservoirs. No one has yet appeared to set the example of constructing such reservoirs, but as soon as it is set, others will rapidly follow it. At present the proffered concession is not widely known, and it is not known how inexpensive the reservoirs will be. The cost of such a reservoir estimated to hold 400 gallons, will be, all told, but Rs. 65.

Bathing platforms.—The demands of the public for unfiltered water for the streets and for flushing the sewers and for the bathing platforms (84 in number) already in existence, are so heavy, especially during the hottest months of the year when the need of extra bathing platforms is chiefly felt, that caution must be used not to increase the number of platforms beyond the capacity of the pumping station to supply them with water. The utmost that the Commissioners felt themselves justified in sanctioning was the construction of three new bathing platforms, and the enlarging of five old ones. The two new platforms constructed during the year are to be found, one in Kripanath's Lane in Ward 2 (Coomertooly), and the other in Marcus Square. They cost Rs. 1,488 and 3,129 respectively. The former will accommodate the largest number of bathers of any platform and the latter is the best arranged in the town. Land for the third is being acquired.

Before selecting the five platforms to be enlarged, a census was taken of the number of persons using the various platforms throughout the town. The months chosen were March and April 1890. Between the hours of 6 a.m. and 9 p.m. no less than 63,886 males and 26,057 females were found to have bathed at the 76 platforms. At one (in Mitter's Lane) no less than 5,344 persons had bathed, and at another (Goaltolee Lane) 2,825 persons, whilst the least frequented (34, Shambazar Street) was visited by 501 persons.

The selection of the platforms to be improved, and the best method of improvement gave rise to discusion, but in the end the five platforms were selected for enlargement which are situated in—

161	Upper Chitpore Road.	61–1	Champatola Lane.
84	Machooa Bazar Road.	31–1	Lower Chitpore Road.
71	Upper Circular Road.		A new bathing platform constructed near Mitter's Lane.

And the sanction of Government has been asked for the acquisition of the lands needed for the purpose. When the arrangements now under consideration have been completed for increasing the pumping power at Mullick's Ghat and working the engines day and night, a further advance in the supply of bathing platforms can be made, but not till then.

Latrines and urinals.—The most approved modern urinals for use in crowded places are known as McFarlane's patent, of which conspicuous examples are seen at the south-west corner of Dalhousie Square and the south-west corner of Wellington Square. The contrast is marked between these commodious and absolutely inoffensive structures and the foul and indecent necessaries that they replaced. There were but three such urinals three years ago, and now we have of these no less than 12, which were erected during the year under review. The sole objection to these urinals is their expense. Each one cost on the average Rs. 857.

Obliterations of foul tanks and wells.—Tank filling has been pressed on with energy during the year, and three tanks have been filled up by the Corporation in addition to 13 filled up by their owners. In three cases the owners have been allowed to de-water and improve their tanks. The tank at No. 11–1 to 11–3 Ram Kissen Dass' Lane is being improved by the Corporation at the cost of the owners. In accordance with the resolutions of the Commissioners so far back as 1884–85, several tanks were acquired for public purposes, viz., a tank at 294–295, Circular Road Upper for a dumping ground, a tank in Woolfut Bagan, and the Puddopooker tank in Bhowanipore. In cases where the tanks have been filled up by the Commissioners, and the owners have refused to pay the cost, possession has been taken by the Corporation. Boundary stones have been erected, and the grounds are being used for various useful purposes.

Structural improvements in the streets of the town.—The street improvement grant from revenue was, as usual, Rs. 30,000. This was for petty improvements only; all larger and more important constructions being undertaken from the Loan Budget. These improvements are, of course, also independent of all works carried out as bustee improvements. The expenditure incurred on this account, as adjusted during the year, was Rs. 36,102–6–4.

It will be understood that the Rs. 30,000 covers only local and comparatively petty improvements. The larger structural improvement, such as the Harrison Road running from Howrah Bridge to Sealdah Station, the extension of Lansdowne Row, the new road running from the Circular Road past the Bhowanipore pumping station, the new road running from it into the Russa Road and other works paid for from special funds or from the three lakhs devoted to the improvement of the amalgamated area are enumerated and described in the Engineer's report.

ABSTRACT OF REPORT OF THE HEALTH OFFICER OF CALCUTTA FOR 1891.

(*Dr. W. J. Simpson.*)

More importance is always attached by sanitarians to a census year, because of the accuracy of the population standard to which the vital statistics can be reduced, and because it affords a favourable opportunity of passing in review the statistics of the period which has intervened between the former census and that just completed. I shall, accordingly, deal with the statistics of Calcutta somewhat more fully this year than usual.

Results of Census of 1891.

Beginning with the census. It was taken on the night of the 26th of February, and the population of Calcutta, including that portion of the suburbs which was amalgamated with the town three years ago, was found to be 681,560 inhabitants, comprising 234,814 females and 446,746 males.

	Males.	Females.	Total.
In the old town - -	287,032	149,371	436,403
In the added area -	128,007	84,991	212,998
In the fort - -	3,119	349	3,468
In the port - - -	26,516	73	26,589
In the canals - -	2,072	30	2,102
Total -	446,746	234,814	681,560

No comparison can be made between the area included in 1891 and that of 1881, for they do not correspond, and therefore the remarks which follow apply only to the town proper, *i.e.*, the old town inclusive of the Port and Fort.

The old town or urban Calcutta has increased during the last 10 years from 433,219 to 466,460, adding therefore to its population 33,241 inhabitants; of these 27,850 were males and 5,391 females. Nearly the whole of the increase has been among the Hindoos, the Mahomedans and Christians having added but slightly to their numbers, while that part of the population coming under the heading of Other Classes has considerably decreased. This is shown in the following table:—

Races.	1881.			1891.		
	Male.	Female.	Total.	Male.	Female.	Total.
Hindoos - - - -	180,084	98,678	278,762	206,449	105,366	311,815
Mahomedans - -	90,667	33,763	124,430	93,472	32,683	126,155
Christians - - -	13,708	9,047	22,755	13,453	10,115	23,568
Other Classes - - -	4,358	2,914	7,272	3,293	1,629	4,922
Total - - -	288,817	144,402	433,219	316,667	149,793	466,460

A comparison of the births and deaths in the 10 years from 1881 to 1890, will give some information as to the manner in which this increase takes place. During the 10 years over 122,000 persons or nearly 30 per cent. of the population died. Had there been no births or immigrants the population would have stood at a little over 310,000 in 1891. Every town replenishes its losses more or less by its births; and in the vast majority of instances the reproductive power is much in excess of the destructive, showing a favourable balance in an excess of births which is called the natural increase. This, however, is not the case in Calcutta, as may be readily seen from the diagram in which the annual births and deaths are compared for 21 years. In the last 10 years,

from 1881 to 1890, there were, assuming the registration of births to be fairly complete, only 80,386 births, a number which falls far short of that of the deaths. The loss by deaths has not been made up by a gain in births, for instead of there being, as in most towns, 3 births to every 2 deaths, there were in Calcutta 3 deaths to every 2 births. When the 80,386 births are added to the 310,528 people surviving in Calcutta, the population amounts to 390,914, which is less by more than 42,000 than the population in 1881. It therefore requires that number of people to have come in fresh from other parts of the country, or elsewhere, to keep the population of 1891 up to that of 1881. But the census shows that Calcutta, instead of diminishing in numbers during that time, has actually increased some 33,000. These also must be new-comers, and the surprising fact presents itself that in the 10 years at least 75,000 people must have come to Calcutta to fill up the gaps caused by the deaths in that period and ensure the increase of population. But all this is on the assumption that not a single person, who resided in the town ten years ago, and who, during the decennium has escaped death, has emigrated from Calcutta. Common experience teaches us that this is not so, and that many have left the town. The number cannot be proximately estimated, but probably not less than 25,000 have left in the 10 years, which means that at least 100,000 immigrants have come to Calcutta during the past 10 years. The census returns show that 55 per cent. of the inhabitants of Calcutta were born elsewhere. Calcutta, then, owes its maintenance and increase of population to immigrants. It is peopled at the expense of other parts of India and elsewhere. The people come trooping in, and in the course of time disappear in what has been termed the "devouring whirlpool of a town." This large floating population considerably affects the health statistics of the town and the deductions to be drawn therefrom.

Only 30 per cent. of the total deaths are children under 5 years of age, whereas in English towns it ranges between 35 and 45 per cent. of the total deaths. This would give a very fallacious view of the real death-rate among children in Calcutta, were the fact not to be remembered that Calcutta is peculiar in possessing so small an infantile population. We shall see later on that the death-rate among children is high.

The death-rate of females is much higher than that of males. In the town during the 10 years the average has been for females 34·5, against 25·4 for males, and in the suburbs, for 1891, it was 40·2, against 33·3. A probable explanation of one of the causes of the higher death-rate of females in Calcutta is that, once settled here, they are, generally speaking, more permanent residents, and, unlike a large part of the floating male population, do not go home to their country when ill or about to die.

The age at which the death-rate falls heaviest on the population is given below, and also the mortality at the different periods of life as compared with the mortality at the same periods of life in England. Probably the comparison is not a fair one. It would be fairer to compare these figures with similar ones belonging to other cities in India, but the figures for this purpose are not available.

Population, deaths, and death-rates per 1,000 *at different periods of life.*

Ages.	Mean Population, 1881–1891.		Annual Mean Deaths in 10 Years, 1881–1890.		Annual Mortality per 1,000 living during 1881–1891.		England and Wales, 1870–1881.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
All ages - - -	302,742	147,097	7,054	5,002	23·3	34·0	22·6	20·0
Under 5 Years -	14,930	13,824	1,981	1,715	132·6	124·0	68·1	58·1
„ 10 „ -	15,021	13,345	277	240	18·4	17·9	6·7	6·2
„ 15 „ -	19,188	10,883	164	141	8·5	12·9	3·7	3·7
„ 20 „ -	25,189	11,426	424	292	16·8	25·5	5·2	5·4
„ 25 „ -	34,177	12,887	621	314	18·1	24·3	7·3	6·8
„ 35 „ -	79,287	29,155	1,114	543	14·0	18·6	9·3	8·6
„ 45 „ -	69,690	28,090	948	436	13·6	15·5	13·7	11·6
„ 55 „ -	33,899	17,735	574	319	16·9	17·9	20·1	15·6
55 and upwards -	11,359	9,751	951	1,002	83·7	102·7	98·	82·
1 year -	3,188	2,784	1,398	1,160	438·5	416·6	197·4	157·3

It will be noted that at all ages there is a difference in the mortality as compared with what obtains in England. The death-rate under 5 years is in Calcutta twice as great, between 5 and 10 years nearly three times, between 10 and 15 more than

double, between 15 and 20 more than three times in males and nearly five times in females, and between 20 and 25 more than double in males and treble in females of the English death-rate at the same respective ages. After 35 years the death-rates of Calcutta and England approach one another more closely. As regards sex in relation to mortality in Calcutta, it will be observed that under 10 years of age the mortality of males is greater than that of females, but above 10 years of age the mortality of females is much higher than that of males. This is specially the case between the ages of 15 and 20, when 25 females die to every 16 males, and between the ages of 20 and 25, when 24 females die to every 18 males. Whether this is due to the influence of child-birth between these ages I am unable to say. The general death-rate may be further examined in its relation to the age distribution. In England and Wales over 13 per cent. of the population are children under 5 years of age, nearly 76 per cent. are persons between 5 and 55, and 10·5 per cent. are persons aged 55 and upwards. In Calcutta only 6 per cent. of the population are under 5 years of age, no less than 87 per cent. are between 5 and 55 years of age, and only 6 per cent. above 55. The two periods of life which raise the death-rate of a town or country are those in which the vitality is low, *viz.*, the two periods below 5 years of age and above 55. For adjustment of any death-rate it is therefore necessary to consider the influence which may be exerted on the general death-rate by these two factors. Calcutta is peculiar in possessing a comparatively small population at both the high mortality ages, and has accordingly always a very much more favourable death-rate record than a town in a better sanitary condition, but with a larger number of its population under 5 and over 55 years of age. With this very important point in its favour, the Calcutta general ratio compares favourably with other towns, but when the age death-rate is examined the figures show a high death-rate for Calcutta.

It is on this age death-rate that the sanitary condition of the town requires to be judged, and the verdict must be that, though improving, it is still bad. It would be a matter for surprise if it was otherwise, for the condition of many parts of Calcutta are as insanitary as they well could be. The insanitary localities of Calcutta will never become healthy until proper building regulations have been adopted and have been in operation for a number of years. A favourable season is only needed for such localities to become extensive breeding grounds for disease which spreads beyond their boundaries. Burrabazar, Jorabagan, and Coomertooly might very well be treated as one large unhealthy area, and a wide street run through from north to south. Fresh air would thus be admitted to these badly ventilated quarters, and the great congestion which prevails there would also be relieved. But unless this work of demolition is accompanied by the enforcement of proper building laws and regulations, which are at present not in existence for Calcutta, the good effects of the demolition would be only temporary.

Vital Statistics of Urban Calcutta.

Vital statistics.

There were in urban Calcutta during the year 1891, 8,256 births, giving an annual ratio of 17·6, against an average of 17·1 for the past decennium. This is higher than all the corresponding ratios of the past decennium, except 1885, 1888, and 1889.

The year 1891 was not a healthy one. The general mortality was comparatively high, being surpassed by the ratios of only three years in the decennium. The figures are as follows :—

	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
25·8	28·9	29·2	27·2	29·2	24·5	23·5	25·0	25·0	26·5	27·9

The number of deaths amounted to 13,033, which gives a death-rate of 27·9, against a decennial mean of 25·8 ; the increase in mortality was chiefly due to a larger number of deaths from fever and cholera. A comparison of the death-rate of each ward with each of their decennial mean death-rates shows that there has been an increase in the death rate in 13 of the 18 wards in the town. The Hindoos' death-rate was higher than that of the Mahomedans; the former being 29·8, the latter 24·1. Females as usual died at a more rapid rate than males, the ratios being respectively 35·2 and 24·4. Infants under one year of age had a higher rate of mortality in 1891 than in the two preceding years; their death-rate was equal to 418 per 1,000, against 273 and 313 in 1889 and 1890.

The deaths from cholera in 1891 amounted to 1,553, against 963 in 1890. The figures for the four quarters of the year were: 1st quarter, 810 deaths; 2nd, 182; 3rd, 126; 4th, 435. The excessive number of deaths during the first quarter was due to the outburst of cholera at the Ardhodaya Jog. I entered very fully into this subject in my supplemental report attached to the Annual Report of 1890, and it will now be unnecessary to more than refer to the subject. One extract may, however, be given, as it deals with the rapid rise in the cholera death-rate, both in urban and suburban Calcutta at the time of the Jog. Cholera.

Statement showing the Number of Cholera Deaths during January, February, and March 1891, in the Town and Suburbs with the corresponding Mean for Five Years :—*

Week ending Month and Date.	No. of Cholera Deaths.	Mean for past Five Years.	Week ending Month and Date.	No. of Cholera Deaths.	Mean for past Five Years.
Town—			Suburbs—		
From 1st to 3rd January 1891	10	10	From 1st to 3rd January 1891	9	11
January 1891, 10th	20	26	January 1891, 10th	22	21
Do. 17th	30	25	Do. 17th	24	27
Do. 24th	35	29	Do. 24th	24	24
Do. 31st	42	30	Do. 31st	44	29
February 1891, 7th	56	40	February 1891, 7th	68	23
Do. 14th	183	33	Do. 14th	355	26
Do. 21st	192	25	Do. 21st	149	25
Do. 28th	92	38	Do. 28th	52	37
March 1891, 7th	50	36	March 1891, 7th	41	34
Do. 14th	27	40	Do. 14th	38	30
Do. 21st	39	39	Do. 21st	62	39
Do. 28th	27	38	Do. 28th	29	36
From 29th to 31st March 1891	11	19	From 29th to 31st March 1891	11	18

The above table shows a total for the town of 137 cholera deaths in January, 523 in February, and 154 in March; and for the amalgamated area, 123 in January, 624 in February, and 181 in March. The subjoined statement gives the number of cholera deaths among residents and pilgrims or strangers in town and suburbs during January, February, and March :—

	Town.		Suburbs.	
	R.	P.	R.	P.
Total deaths in January	137=131	+ 6	123= 99	+ 24
Do. February	523=258 / 42†	+223	624=284	+340
Do. March	154=138	+ 16	181=166	+ 15

From a not unusual number of deaths in January the mortality of the town of Calcutta ran up to 523 deaths in February, which is the highest number in that month since 1866, and more than half the total mortality from cholera in Calcutta during the past year. A similar increase took place in the suburbs, the greater portion of the mortality being in the districts near Kalighat. By the end of March the mortality had again become low. Now, this outbreak and its behaviour is contrary to the ordinary seasonal bearing which characterises the prevalence of cholera in Calcutta, which increases in March, and generally rises to its maximum in April. Moreover, the epidemic, preceded as it had been by two years of very low mortality from cholera consequent on the introduction of a better water supply, consisted of a sudden and severe outbreak, followed by a return to the former low mortality. In the town, of the 523 deaths from cholera in February, 223 were pilgrims and 42 strangers. If we only consider up to the 15th February inclusive, even a larger proportion are pilgrims, for out of 260 deaths, 160 were pilgrims. In the suburbs the proportion is even higher, for out of 640 deaths, 340 were pilgrims.

Apart from the Ardhodaya Jog there appears to have been a slight increase in the cholera death-rate in the town proper and a slight decrease in the suburbs.

* Town of Calcutta refers to the town as understood before part of the suburbs was amalgamated with it. Suburbs refers to that portion of the suburbs which was amalgamated with the town.

† 42 strangers, not known whether pilgrims or not.

It may be remarked that notwithstanding the abundant supply of water brought into the town and pumped from the several reservoirs, many of the inhabitants still depend for much of their supply on wells, the water of which is very much polluted. It may seem paradoxical to state that there is scarcity of water in the town; yet this is actually the case, owing to the extraordinary waste that goes on in nearly every house in which water pipes have been laid. The effect of the increased public supply has been to increase the waste in those houses previously plentifully provided for, and to extend to a few other houses a supply which they were formerly without, and here also an immense waste is a matter of every-day observation. An additional number of standposts has been also added to the streets, but the scarcity is felt chiefly inside the bustees where the majority of the inhabitants are in much the same position as before the extension of the supply. They are only able to obtain water from the standposts at a distance. They, therefore, either store a supply in vessels subject to contamination, or resort to their wells and tanks. The labouring classes who are most affected with cholera go to their work before the supply can be obtained from the pipes, and they return to their homes after that supply has been stopped. The benefit they derive from the increased water-supply is, accordingly, small; and until a better system shall be introduced by which waste shall be prevented and the inhabitants shall be provided with a public supply of water, such as satisfies the inhabitants of an English town, the fluctuation from year to year of the cholera death-rate varying with seasonal influence is likely, other things being the same, to be not much different from what it is at the present time. A constant system, if it were possible to obtain it, would be the best; but in the event of this being impracticable on account of the necessary pumping, there should certainly be a supply throughout the whole of the day and of a kind to meet the requirements of the working people. The dangers of an intermittent system, such as Calcutta possesses, are sufficiently known to need no comment.

Bowel complaints.

There was an increase in the deaths from dysentery and diarrhœa; the deaths amounted to 1,433, against 1,311 in 1890, and 1,327 the mean number of the past 10 years.

Fevers.

The number of deaths registered as due to fevers amounted to 4,675 against 4,154 in 1890. Last year attention was drawn to the fact that fevers were 626 above the mean number of the decade. That increase has again progressed, and the deaths from fevers in urban Calcutta have now reached 1,111 above the mean of the past 10 years. In reporting on the cause last year, I stated that the report of Mr. Baldwin Latham on the drainage of Calcutta sufficiently explained the major causes at work inducing this unhealthiness, and that Mr. Baldwin Latham had conclusively shown that the Calcutta sewers, when flooded, leak and pollute the soil and subsoil water, which conditions are known to be very important factors in the causation, not only of fevers, but of a number of diseases included under the general head of "Other Causes"; and that the sooner the defects pointed out in the sewerage system were remedied, the more speedy would be the reduction of the death-rate so far as it depended on this cause. This view of the causation of ill-health was believed to be novel, though it is an elementary fact in the science of preventive medicine, that given pollution of the soil and favourable seasonal conditions, fever is sure to be engendered. That the sewers are in an unsatisfactory condition needs no expert in drainage engineering to determine. Anyone driving through the streets of Calcutta and over the open manholes will be soon made aware of the presence of sewer gas of a most offensive character, which becomes more than ever noticeable in the crowded quarters of the town. That a number of the sewers leak has been proved by uncovering them for inspection; that the soil is polluted has been determined by analysis; that the subsoil water is contaminated has been ascertained by the analysis of the water of wells, so that there is no escape from the conclusion as to the unsatisfactory state of the sewers. Both by inspection and by certain well-known calculations used by sanitary engineers, Mr. Baldwin Latham satisfied himself that the drainage system was in a most insanitary condition, polluting to a considerable extent both the soil and the atmosphere. With this opinion, I, as Health Officer, most thoroughly agree, for my experience, founded on personal observations as to the condition of the drainage system in many portions of the town fully corroborates Mr. Baldwin Latham's statements. The above-named sanitary engineer's report is accompanied by recommendations as to the adoption of certain remedies, and it would be well if his suggestions were adopted. The engagement of Mr. Baldwin Latham to overhaul the drainage system of the town was, next to the introduction of the water-supply to the

suburbs and the opening up of the Harrison Road, the most important sanitary measure undertaken during the year. That general seasonal causes favourable to the prevalence of fever have been at work during the past year may be admitted, but there are local conditions upon which these causes have found ample material to work. For urban Calcutta the defective drainage system and the tanks filled up with garbage still in a state of decomposition add their pollutions to the soil and form a breeding place for fever. For suburban Calcutta the want of a drainage system, the recent excavations at the docks, with their exposure of virgin soil and the absence of provision for the effective drainage of the raised land, and, generally, the proximity of the Salt Lakes, are reasons why fever and general ill-health should prevail. The importance of these local conditions as manufactories of disease is in no way lessened by the citation of statistics as to similar fevers having prevailed in other parts of Bengal.

Other Causes.

The deaths from other causes than those included under the distinctive heads of cholera, bowel-complaints, fevers, and small-pox amounted to 5,359, against a decennial mean of 5,344.

Vital Statistics of Suburban Calcutta.

There were in suburban Calcutta 4,221 births in 1891, giving a birth-rate of 19·6, against 3,970 in 1890, equal to a birth-rate of 18·4. The birth-rate has gradually improved during the past three years, the ratios being 16·5, 18·4, and 19·6.

There were 8,484 deaths, giving a death-rate of 39·4 per 1,000 of the population, against 7,986, equal to a ratio of 37·0 in 1890. The districts of Ballygunge and Kidderpore presented the highest death-rates, both being over the annual rate of 43 per 1,000. The annual death-rate from fevers at Kidderpore was equal to 17·2 per 1,000 of the population,

The number of deaths from the principal causes during the past two years were—

—	1891.	1890.	1889.
Bowel complaints -	1,283	1,448	1,425
Cholera - -	1,403	916	1,236
Small-pox - -	5	172	28
Fevers - -	3,176	2,638	2,653
Other causes - -	2,531	2,812	2,540

The following comparative statement shows the total number of births and deaths, and the birth and death rates per 1,000 of population in urban, suburban, and total municipal Calcutta during the year 1891 :—

—	Urban Calcutta.		Suburban Calcutta.		Total Municipal Calcutta.	
	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.
Births -	8,256	17·6	4,221	19·6	12,477	18·3
Deaths -	13,033	27·9	8,484	39·4	21,517	31·5

Vaccination.

The total number vaccinated during the year 1891 amounted to 13,781 ; of these 10,875 were primary, and 2,906 were re-vaccinations. The corresponding figures of the previous year were 16,131 and 11,043 respectively. This shows a decrease of 5,256 primary and 8,137 re-vaccinations. The cause of decrease was the great prevalence of small-pox during the first five months of the previous year, when children up to a very tender age were vaccinated, and many elderly people who had been vaccinated or inoculated in their infancy resorted to re-vaccination. The increase of the previous year was also partly due to the vaccination and re-vaccination of many persons who came to our stations to be vaccinated from parts around Calcutta during the prevalence of the epidemic.

Of the primary vaccinations, viz., 10,875, 9,291 were successful, 711 unsuccessful, and in 893 cases the result was not ascertained. The rate of success in primary vaccination calculated on the ascertained successful cases was 92·87. Of the 2,906 re-vaccinations, 728 were successful, 1,937 unsuccessful, and in 241 cases the result was not ascertained. The rate of success in re-vaccinations was 27·31. The rates of success in primary and re-vaccination during the previous year were 88·00 and 20·39, respectively.

Of the total number vaccinated, 7,966 were males, 5,785 were females: 514 were Christians, 9,888 were Hindoos, 3,309 were Mahomedans, 70 were other castes; 5,224 were under one year, 5,283 were one year and under six years, and 3,274 above six years.

In Calcutta both the human and animal virus was kept up by regular transmission, and used all the year round. All the public vaccinators of the town and amalgamated area were supplied with vaccinated calves throughout the year, so that people had the option to be vaccinated with whichever lymph they preferred. The intelligent classes generally preferred the animal virus, and hence almost all home vaccinations were performed with it.

Vaccination is carried on in Calcutta under the provisions of the Compulsory Vaccination Act, the details of which having been reported in previous years, it is not necessary to repeat them here. The registrars submitted to the Health Officer by monthly statements the names of 9,883 persons who failed to produce the statutory certificates of having had their children vaccinated. These cases were inquired into by the department, with the result that 5,765 were traced and vaccinated, 1,505 were found to have left Calcutta, 693 were not found at the addresses given, 768 had died, 932 were ill, 11 had natural small-pox, and 209 were prosecuted and vaccinated by order of magistrates.

Under the powers conferred on the vaccinators by the amended Act, house-to-house inquiry for unprotected children, and also for elderly females in the Hindoo and Mahomedan zenanas was daily made by the male and female vaccinators of the town and added area, and where unprotected persons above one year were found, notices were issued to have them vaccinated. In this way 700 notices were served during the year. Most of the persons served with notice complied with the law, but 184 had to be prosecuted.

Small-pox.

The year under report was a non-epidemic year. The few isolated cases which occurred in the different parts of Calcutta were mostly imported, and owing to the early adoption of precautionary measures the disease did not tend to spread. From September to December Calcutta was entirely free from small-pox.

During the year under report the following ships arrived at the port with small-pox cases on board; on the 13th June *S.S. Umballa*, with a case of small-pox, and on the 21st August *S.S. Bhira*, with three cases of small-pox, of which one died.

Whenever the disease occurred vaccination and re-vaccination were pushed on with vigour. Most of the cases were removed to hospital, and their bedding and clothing destroyed, and the rooms in which they live were disinfected under the personal supervision of the medical inspectors. These precautionary measures helped to keep the disease under control, and prevented it from spreading.

Incineration of refuse.—The burning of refuse still further occupied the attention of the Commissioners during the past year, the result being that an incinerator, with arrangements for passing all vapours formed during the process of combustion through a cremator, is being now erected in the suburbs, and is approaching completion. Before this step was taken the subjoined report on the subject was presented to the Commissioners.

"My last report on the incineration of refuse showed that the Calcutta refuse could be burnt at all times, even during the period of the heaviest rains, and that therefore the contention that the refuse would not burn under such adverse circumstances had been proved to be fallacious.

"The difficulty, however, which was encountered in consequence of the smoke and offensive smells issuing from the chimney, considerably marred the value of the success, and made it evident that if this smoke nuisance could not be overcome, incineration, if adopted, must be carried on outside the town. Pending the solution of this further problem, I thought it desirable to suggest that the incinerator in Circular Road should be stopped, and it was with the special object of ascertaining how this smoke nuisance could be best done away with that, while in England I availed

myself of the opportunity afforded of visiting a number of towns where refuse destructors were at work.

"For this purpose I visited the refuse disposal works at Glasgow, Liverpool, Warrington, Manchester, Leeds, Bradford, Nottingham, Birmingham, London, Ealing and Hastings, and at every place enjoyed, through the courtesy of the authorities, the utmost facilities for studying the whole question, and having explained to me the working of the refuse destructors there.

"I found that those towns in England which had adopted incinerators had passed through a similar experience to that which we have done in Calcutta. First of all they had some difficulty in burning the refuse, and when they had succeeded in this, there were numerous complaints as to the smells proceeding from the chimney, so that some Corporations were threatened with law proceedings to compel them to shut the works. The Corporations, however, persevered, and with the hope of abating the nuisance, made vigorous efforts to improve the combustion in the furnaces by modifications in the form of the furnaces and poisition of the flues, then by the adoption of the air-blasts and steam-blasts.

"With the details of the steam-blasts as applied to incinerators the Calcutta Commissioners are familiar, having an example in Messrs. Garlick's incinerators. There the heated gases escaping from the furnaces to the chimney pass on their way through a multitubular boiler which generates the steam that is conveyed by pipes to the hearth of the furnaces, and supplies the blast. The air-blast has steam generated in the same manner, and this is utilised to work an engine which turns a fan which supplies air in great force to the furnace-fires.

"Both air-blast and steam-blast undoubtedly improve the combustion in the furnaces, but neither has proved effectual in totally destroying the empyreumatic vapours escaping, though there can be no doubt as to their usefulness in raising the heat of the furnaces, and consequently burning the refuse more expeditiously. In the majority of instances they are used merely as auxiliaries, the natural draft of the chimney being employed when from any cause the blast is not working.

"Other means had therefore to be devised by which the unburnt and offensive vapours should be completely destroyed before leaving the chimney, and experience has shown that these vapours must be dealt with separately after leaving the furnaces, and before entering the chimney. In fact the same conclusion was arrived at as was come to in Calcutta, viz., that the only proper manner of dealing with the offensive gases and vapours was to burn them in a special furnace or cremator.

"This plan has been adopted and has succeeded admirably, so that there are no longer complaints against the destructors, and they are being erected in central quarters of the different towns without fear of creating a nuisance. I saw a destructor in Bradford which has been recently erected, that bordered upon one of the principal roads quite close to inhabited houses; another destructor, recently erected in Liverpool, is in a central part of the town. That at Ealing struck me as furnishing the most crucial test of the efficiency of the burning process, and of its freedom from nuisance. Ealing is a residential suburb situated about 10 miles from London. The sewage of the town has to be purified before being discharged into the river. Part of the purification is accomplished by precipitating the sewage with chemicals in tanks. The solids fall to the bottom of the tank in the form of sewage sludge. This sewage sludge is periodically removed and mixed with house refuse, put into the destructors and burnt. If anything can produce an abominable smell from a chimney, this would, yet the vapours here are so completely burnt after leaving the furnaces, and before entering the chimney, that there is absolutely no smell. Houses have been built within 100 yards of the works. The locality is an undulating one, and it so happens that the top of the chimney is on a level with the first floor windows of Baron X.-'s residence, which is less than half a mile away. If there was the slightest nuisance from the chimney, there can be no doubt, with such a powerful opponent close by, the destructor would not be tolerated.

"For burning the vapours before they enter the chimney several kinds of cremators are used. In Birmingham they use one kind, in Manchester another; while in most of the towns Jones' Fume Cremator is used. It does not matter much what kind of cremator is used as long as it accomplishes its object, viz., the breaking up of the offensive vapours into simple inoffensive elements, and that is obtained by keeping the creator at a continuous heat of over 1,000 degrees.

* * * * * *

"Previous to my visit to Europe I was under the impression that poudrette works might be suitable for suburban Calcutta, but after having seen the immense works in

Paris, and also those of Birmingham, Manchester, and Warrington, I am convinced that these works are not only too costly and too complicated for Calcutta, but that the high prices given by the farmers for this kind of manure in England and France could not be obtained here, and it is doubtful whether there would be much of a demand for its supply. Possibly a few tea planters would be glad of the poudrette, and the sale after a time would possibly increase, but the loss at first would be great, and it is questionable whether it could be ever worked but with a loss.

"I met at the International Hygienic Congress the constructor of the poudrette works at Bondy, in Paris, and had a conversation with him on the subject. One would have thought he would have been in favour of his own works, but over 20 years' experience had not given him a favourable impression. The Bondy works cost nearly 300,000*l.*, and they are not the only ones in Paris. The products from the excreta and urine are sulphate of ammonia and poudrette.

"I think, therefore, that this question of poudrette works for Calcutta may be dismissed as being an unsuitable mode of disposing of the sewage of suburban Calcutta, and with this definitely settled, the Commissioners are able to proceed with Mr. Baldwin Latham's scheme of a low level sluice outfall with much more confidence.

"As to the refuse, there can be no doubt that burning is the best mode of disposal. Mr. Harrington's furnaces differ somewhat from those which give the best results in England, but the refuse here is bulky and of a different kind, and the furnaces here have had to be adapted to the altered conditions. Of the burning capacity of the furnaces there is ample evidence, and as I have stated, the smoke can be burnt, and has to be burnt, in a separate cremator, and may also be washed before leaving the chimney. Mr. Harrington makes an offer to build incinerators with these improvements, and I would recommend its acceptance with the proviso that if his cremators are not a complete success, he should put in at his own expense to each incinerator two of Jones' Fume Cremators patented in England."

Sanitary improvement.—Much has been done in the year in demolishing unhealthy areas, especially in connexion with the construction of the new Harrison Road in the heart of the Northern portion of the town, which has cleared away some very congested and unhealthy localities. Similarly the erection of the new water-works at Bhowanipore has been accompanied by the clearance of a large tract of bustee land which was always remarkable for its filth and as a centre for the diffusion of disease to the surrounding neighbourhood. In this case the substitution of good roads, open spaces, and building plots has materially improved the healthiness of the surrounding houses. The construction of the Lansdowne Road has also been the means of clearing away many unhealthy spots, removing a number of unhealthy tanks, improving others, and opening up a wide street from north to south which will act as an excellent ventilator to that part of the town. These measures have conduced to healthiness and constitute good work in the cause of public health; but it is necessary to mention in connexion with these improvements what I have mentioned in almost every report I have written on the health of Calcutta, that to grapple with the problem of rendering Calcutta a healthy city, a system or scheme very different from this is needed. Demolition and clearances are necessary, and a vast amount remains to be done in this direction, especially in the riparian and some other wards; but if any permanent good is to be effected, the demolition of unhealthy areas must be accompanied and supported by that which in the long run is a much more powerful factor in making a city healthy, viz., a good Building Act, which shall provide that streets shall be laid out sufficiently broad and regular, and shall render compulsory the erection of buildings and houses on a healthy plan and system. It is only by this means that the sanitary appliances of drainage can be effective. To attempt to sanitate some of the crowded localities of Calcutta must, by the nature of the circumstances, end in failure. The crowding together of houses under the present rules and the erection of badly ventilated houses can only end in foul passages, the formation of unwholesome narrow lanes, faulty and offensive drainage, and impurity of the air. There is a very intimate connexion between the building laws of a city and the benefits which will accrue from sanitary measures and from drainage. For in a thickly-populated unhealthy area the very necessities of the inhabitants are such that every place is filthy notwithstanding much cleansing, and the drains are always out of order, giving forth offensive effluvia which no ingenuity or methods in sanitary science can rectify.

ABSTRACT OF REPORT OF THE MADRAS MUNICIPALITY FOR 1891–92.

(*Lieutenant-Colonel G. M. J. Moore, President.*)

Roads.—Under the head of improvement to streets considerable progress has been made, the drainage of Annah Pillay Street is practically complete, a few minor works such as cesspools and silt traps alone remain to be done. The completion of these works depends on the acquisition of some more properties.

Black Town Drainage—Silt Traps. 20 silt traps have been constructed in connexion with No. 2 sewer. This sewer was opened in August 1891, and the farms at Wall Tax Road and Teroopally Street were closed.

Surface Drains.—The amount of work done in connexion with the surface drains during the year was 2,762 ft., bringing the total up to 231,217 ft.

House Drainage.—During the year Rs. 489–15–2 was the amount paid to contractors for work done to house drains where the owners failed to comply with the notices, and Rs. 630–0–7 was the amount recovered from the owners, including arrears. The number of house drains altered and repaired by the municipality during the year was 2, and by owners 5. This makes a total up to date of 8,670 house drains altered and repaired since the drainage works began.

Water-Supply.—In connexion with the new water-supply no further action has been taken, pending the report of Mr. E. Cousins, who was appointed by Government and sent out from England to report on this subject as well as on the drainage of Madras. Every assistance was given to Mr. Cousins to enable him to understand the existing arrangements. The delivery channel has been surveyed and demarcated by the Revenue Survey Department, and a plan is in preparation.

Owing to the rapid increase of new services during the last few years, it was found that the supply at public fountains was becoming defective, and it was decided to stop all further connexions to private properties.

During the year under report, 2,727 yards of pipes were laid, and 38 fountains, 16 valves, 129 stop-cocks, and 9 flushing pipes were fixed within the municipal limits.

On the 1st April 1891, the level of the Red Hills Lake stood at 37·87, and at 37·39 on the 31st March 1892. On the 10th June 1891, the level of the lake at Red Hills fell to 35·47, and pumping was commenced and was continued till 26th October 1891.

The quantity of water supplied to the city during 1891–92 was 327,888,049 cubic feet, as compared with 334,579,842 cubic feet in 1890–91.

The water taken (1) from Red Hills Lake, (2) from the Delivery Channel at Kilpauk, and (3) from the pipes at three places within the town was, on chemical examination, proved to be bad in every case.

Conservancy.

No change has been made in the system. The scavengers are employed and paid departmentally, and the carts, bullocks, and drivers are supplied by one and the same contractor. This has worked fairly satisfactorily, and the scavenging has been carried out as efficiently as could be expected, considering the smallness of the establishment for the area to be conserved. It is in contemplation for the municipality to purchase the carts, and hire only the bullocks and drivers at the close of the present contract, by which a considerable saving might be effected.

Vaccination.

The total number of persons vaccinated during the year 1891–92 was 26,493, against 24,768 in 1890–91, showing an increase of 1,725 cases in spite of the prevalence of cholera, which always deters people from bringing their children to the depôts. Out of the 26,493 cases, 25,004 were successful, 583 unsuccessful, and 906 unknown. The unsuccessful and unknown results exceed those of the last year by 268 and 538 respectively. They were mostly among the convicts vaccinated in the Penitentiary and transferred to other jails after operation, or released after the expiry of a short term of imprisonment. Out of 26,493 cases vaccinated within the city of Madras

25,102 were operated on by the municipal vaccinators directly from the calf, and the operation in 1,391 cases, from April to October 1891, was done by the medical subordinates attached to the Penitentiary with Lanoline paste supplied to them from Dr. King's Vaccine Depôt. Of the 1,391 cases, 697 were reported as successful, 115 as unsuccessful, and 579 as unknown.

From November 1891 inoculated calves were sent to the Penitentiary, along with municipal vaccinators, to vaccinate the convicts at the request of the Superintendent of Prisons for the town of Madras, in consequence of the abolition of the Government Vaccine Depôt under Dr. W. G. King.

The following is a comparative statement of the results of 1890–91 and 1891–92. The increase in the number of vaccine operations was mainly due to the vaccination of the Natal emigrant coolies, who resorted to the Monegar Choultry Depôt, and to the fishermen of the Cassimode and Thondiarpet Coopams, &c., sending their children to be vaccinated at the public depôts.

Year.	Total vaccinated.	Compared with the preceding Year.		Successfully vaccinated.	Percentage of success, excluding unknown.
		Increase.	Decrease.		
1890–91 - -	24,768	—	—	24,085	98·70
1891–92 - -	26,493	1,725	—	25,004	97·72

The percentage of successful cases, excluding the unknown from the total, was 97·72 as against 98·70, showing a decrease of 0·98, which is due to the inclusion of 1,391 cases vaccinated among the convicts of Her Majesty's Penitentiary with lanoline paste, from April to October 1891, by the medical subordinates. There has been an increase in the unsuccessful and unknown results over that of 1890–91 by 268 and 538 respectively, for the returns received from the medical officer in charge of the Penitentiary show that out of 1,391 cases operated on with lanoline paste, 697 were successful, 115 unsuccessful, and 579 unknown. The lower percentage of successful cases is also partly due to the Monegar Choultry Depôt, which is by far the largest in the municipality returning a much larger number of unsuccessful cases than it did last year.

Out of 26,493 cases vaccinated, 14,765 were males, and 11,728 females; 1,068 were Europeans, East Indians, and Native Christians, 1,619 Mahomedans, and 23,806 Hindus. Out of the total cases, 22,451 were primary, and 4,042 re-vaccinations. Out of 22,451 primary vaccinations 22,165, or a percentage of 99·45, were successful, as against 99·29 in 1890–91.

The number of infantile vaccinations performed during the year was 15,903, as against 15,709 in 1890–91, showing a slight increase of 194 cases. Of these 15,798, or 99·82 per cent. were successful. The following statement will show that during the past three years the largest number of cases vaccinated was among children under 1 year. Out of 26,493 cases vaccinated in 1891–92, 15,903 were infants under 1 year of age, 4,682 above 1 and under 6 years, and 5,908 above 6 years :—

	Total Number Vaccinated.			Ratio.		
	1889–90.	1890–91.	1891–92.	1889–90.	1890–91.	1891–92.
Under one year - - -	15,620	15,709	15,903	63·7	63·4	60·0
Above one and under six years -	5,434	5,252	4,682	22·2	21·2	17·7
Above six years - - - -	3,448	3,807	5,908	14·1	15·4	22·3
Total - - -	24,502	24,768	26,493	100·0	100·0	100·0

The number of births registered during the year 1891–92 was 18,798. Of these 462 were still-born and 18,336 were born alive. There were 6,676 deaths under one year from various causes, exclusive of the still-born cases. Deducting these from the total births registered, it will be seen that the number of infants vaccinated exceeds the number of live children of one year of age. If an allowance is made for the number of children that died under one year of age, but were vaccinated before their death, the numbers are about balanced.

For every 100 of the population 6·64 were vaccinated during the year. The proportion of Hindus is especially large. In the year 1891–92, 7·67 per cent. of that class resorted to vaccination, against 2·73 among Europeans, East Indians, and Native Christians, and 3·28 among Mahomedans.

During the year, 24 deaths from small-pox occurred against 92 in the previous year, showing a large decline in the mortality. Of the 24 deaths, three occurred in hospitals and dispensaries, and the remaining 21 in private houses in the city. The disease is frequently imported to Madras from the adjacent districts. Attempts are constantly being made to stamp out the disease, but fresh cases occur in some other division, and from inquiries made there is no doubt that a very large proportion of the cases that end fatally occur among unprotected people who come up to Madras after contracting the disease up-country, and as small-pox has a long period of incubation, the outward manifestations develop after their arrival in the town.

The disease was not confined to any particular local area but scattered over the town. Some cases occurred among the unprotected under six months, postponed cases above six months and unprotected people of various ages. Immediate steps were always taken in vaccinating the unprotected in the neighbourhood where cases of deaths from small-pox occurred, and the houses were also disinfected.

Vital statistics.

Births.—During the year 1891 the total number of births registered was 18,061, exclusive of stillborn, which is more than the preceding year by 492, and is the highest number in the decennium, though the birth-rate of 39·9 is considerably lower than that of last year, 44 per 1,000, as it is calculated on the census of 1891, and no allowance has been made for the gradual increase of the population during the decennium since the former census. Of these births, 9,377 were males and 8,684 females. The number of still-births was 489 against 533 in the previous year, being 274 males and 215 females. This figure is above the decennial average of 413·9.

The Hindus were again the most prolific race in Madras, with a ratio of 40·4 per 1,000, the Mahomedans second with 38·9, and the Europeans, East Indians, and Native Christians last with 37·3, which shows some improvement on their last year's ratio.

Mortality.—The total number of deaths during the year was 23,808 against 17,194 the year before, giving a ratio of 52·6 per 1,000. The comparative death-rates of the different castes were Mahomedans 59·6, Hindus 52·5, and Christians 44. An inquiry into the causes of this high mortality, which is about 17 per 1,000 above the average for the last 10 years, shows that there were certain more or less exceptional causes, viz., the high price of food, which largely predisposes to disease, more especially in a poor population, and the fact that at least two epidemics, fever and cholera, were rife in the city and prevailed amongst the masses, whose resisting powers were lowered through the indifferent quality and insufficiency of their food. The regular labourer in Madras gets about Rs. 6 a month, and the casual labourer about As. 3 or 4 a day. Out of this, in many cases, a number of children have to be provided with the necessaries of life.

The epidemics can only be held to be a proximate cause of the high mortality, for it is now generally recognised that the epidemic susceptibility of a city is in inverse proportion to its sanitary condition. Moreover, if the deaths from this cause were eliminated from the total, the remainder would still be abnormally high for a city in which sanitation has been in progress for a quarter of a century. The great difficulty in dealing with the problem of Madras sanitation lies in the fact that the high death-rate is not the result of any one cause, but of a conjunction of nearly all the causes that affect mortality all over the world. To enumerate them as shortly as possible, the more important ones are an indifferent water-supply, defective drainage, and over a considerable portion of the municipality no drainage at all, a porous soil loaded with organic impurity, a putrid and fluctuating sub-soil water rising comparatively near the surface, want of open spaces in some parts of the town, crowded parcherries for the poor, overcrowded and ill-ventilated houses for the middle class, in many cases directly connected with the sub-soil water by wells in their interior, burial grounds and slaughter-houses in the city; and lastly, the general social, conjugal and religious habits and customs of the people. These are matters which can only be remedied by a heavy expenditure of money and years of systematic and patient work. There can be no doubt that the high death-rate is due to local conditions and not to climatic influence, for the people, European and Native, who live in well-built houses in the better parts of the town, and are properly clothed and fed, enjoy a comparative immunity from disease and death.

Mortality from different Diseases.—A comparison of the relative mortality from different diseases in 1890 and 1891 shows that the number of deaths registered under small-pox and measles was lower, and the number under fevers, diarrhœa, and dysentery, cholera, and "other causes" was higher during the year under review than in the previous year:—

Statement of Mortality from the Prevalent Diseases in 1891 *contrasted with that of* 1890.

Years.	Small-pox.	Measles.	Fevers.	Dysentery and Diarrhœa.	Cholera.	Total.	Other Causes.	General Total.	Ratio per 1,000.
1890	78	412	4,685	2,704	744	8,623	8,571	17,194	37·9
1891	66	372	6,731	4,573	1,916	13,658	10,150	23,808	52·6
Average of 10 previous years.	822·9	277·3	3,828·7	2,546·2	413·6	7,889·7	8,229·9	16,119·6	40·6*

* Calculated on the census population of 1881.

The following table shows the mortality of the year, classified according to age:—

Age.	Population.	Deaths.		Total.	Ratio per 1,000.
		Males.	Females.		
0–	13,667	3,178	2,665	5,843	427·5
1–4	41,016	1,799	1,917	3,716	90·5
5–9	52,611	656	717	1,373	26·0
10–14	43,804	363	465	828	18·9
15–19	39,288	301	450	751	19·1
20–29	87,366	892	1,355	3,247	25·7
30–39	67,462	864	981	1,845	27·3
40–49	48,904	782	731	1,513	30·9
50–59	30,039	707	639	1,346	44·8
60 and upwards	28,361	1,958	2,388	4,346	153·2

The noticeable feature of this table is the abnormally high infantile mortality, the sure sign of defective sanitation. The deaths under one year of age, excluding still-births, were 5,843, against 5,829 in the previous year, giving a ratio of 427·5 per 1,000 of infants under one year—or 30·19 per cent. of the children born alive died before completing their first year. The excessive infantile mortality of Madras is forming the subject of an inquiry by the Sanitary Commissioner.

The infantile mortality under 1 year and of 1 and under 5 years is localised according to Divisions in Appendix VI, Table 2. It is shown that the highest rate of mortality for the first period was in the 1st Division, viz., 559·4 per 1,000 infants, and the second highest in the 2nd Division, viz., 534·2; and that for the second period the 1st Division had the highest ratio of mortality, viz., 135·9, and the 3rd and 4th Divisions are nearly equal for the second place with 96·6 and 96·7 per 1,000 respectively.

According to sex 11,500 males and 12,308 females died during the year, against 8,514 males and 8,680 females in the previous year. The fact that the male European deaths outnumbered the female is attributable to the fact that there are considerably more male than female Europeans in Madras.

Small-pox.—The number of deaths from small-pox was 66, or 0·1 per 1,000 of the population. A considerable number of the cases were imported during the stage of incubation. It is worth noting that the mortality from this cause among Mahomedans, who offer the greatest opposition to vaccination, was four times as heavy as that among any other class.

Cholera.—This disease was epidemic in Madras during the latter part of the year, the total mortality being 1,916 and the ratio 4·2 per 1,000.

Measles.—The mortality from this disease has diminished since the epidemic occurred in 1889 causing 1,204 deaths. In 1890, 412 deaths occurred. In the year

under review the number was 372. During this year the mortality decreased quarter by quarter, the numbers being 118, 108, 82 and 64.

Fevers.—The mortality under this head amounted to 6,731 against 4,685 in the previous year, giving a ratio of 14·8 deaths per 1,000 of the population. There is no doubt that some form of fever was epidemic in Madras during the latter part of the year, and from inquiries made by some of the Registrars into all the cases of fever that were registered in their offices during a certain period, it is believed that it was influenza, which was almost pandemic over the globe, but the evidence was far from satisfactory. It is a matter of the greatest difficulty to diagnose a non-eruptive fever among people who rarely attend a hospital or avail themselves of the ministrations of a qualified medical attendant of any grade, and who for the most part die in their parcherries without being seen by any one but their relatives. Even house-to-house visitation is of very little use, for an obscure fever cannot be diagnosed without a temperature chart and an accurate record of signs and symptoms extending over at least two days. Apart from this the ordinary type of Madras fever was probably more fatal than usual. Amongst the Mahomedans the death-rate from fevers reached the extraordinarily high figure of 18·5, which is as much as the death-rate from all causes in a fairly healthy city. Amongst the Hindus it was 14·8 and among the Europeans, East Indians, and Native Christians 10·5.

Bowel Complaints.—The mortality from dysentery and diarrhœa was 2,996 and 1,577 respectively, with ratios of 6·6 and 3·4 per 1,000, against 1,682 and 1,022, with ratios of 4·2 and 2·5 in the previous year. A high mortality from these complaints is a usual accompaniment to an epidemic of cholera, but at the same time it is probable that a considerable number of deaths from the latter cause were registered under these heads through ignorance, or to prevent alarm amongst relatives, or to avoid municipal visitations. When the cases have not been seen during the illness by a medical man, it is hopeless to expect to prove in a court of law that the cases have been falsely registered, however suspicious the circumstances may be.

ABSTRACT OF REPORT OF THE MUNICIPAL COMMISSIONER FOR THE CITY OF BOMBAY FOR 1891-92.

(*Mr. H. A. Acworth.*)

Public Works.

DRAINAGE.—*Pumping Station, Love Grove, Worli.*—The existing machinery at this station has been kept in as good working order as its character admits of, and no breakdown or accident of any serious nature occurred. The report of the Committee of the Corporation appointed to consider the efficiency or otherwise of the machinery was discussed by the Corporation on the 31st August 1891. The conclusion arrived at was that the existing machinery should be condemned and more modern and economical machinery substituted for it, and accordingly sanction was given to the expenditure of a sum of Rs. 4,00,000 for this purpose, viz., Rs. 3,38,259 for the purchase of 4 Worthington 15 million gallon pumps and steam engines, and the balance for the construction of the necessary masonry work. The new machinery should, under the contract entered into, be supplied and fixed during the current year. The lighting of the Pumping Station has been improved by the substitution of a new dynamo of the latest type for the old one.

House connexions in first drainage section.—No tenders for this work have been received, nothing further was done until the 4th January 1892, when the Corporation passed a resolution to the effect that efforts should be made to undertake the work as early as possible. Accordingly the work was proceeded with departmentally, and good progress has been made.

In the Queen's Road and Girgaum Drainage Section, the work in connexion with the pipe sewers and house connexions has, so far as the contractors were concerned, been finished. In the Agripada district fair progress has been made in the house connexion work, and it is anticipated that it will be completed within the contract time. The laying of a pipe sewer in Government House Road and Parel Village Main Road was sanctioned by the Corporation on the 14th January 1892, and at the close of the year a tender for the work had been accepted.

The Sanitary Commissioner having raised certain points regarding drainage and sewerage, a Committee of the Corporation conferred with him and discussed the following points:—(*a*) The question of concrete foundations for drains; (*b*) the question of the water-tight condition of pipe drains; (*c*) the saturation of the ground with subsoil water; and (*d*) the removal of silt from the drains.

The question of the location of an outfall at Colaba has been definitely settled in the negative. The Committee appointed by Government to discuss this question disapproved of the change of outfalls from Worli to Colaba. The Military authorities also objected to it, and Government finally decided that Worli should continue to be the place for the outfall of the drainage of Bombay.

Several new latrines and urinals have been erected, and several are in course of erection. The several drainage sluices were worked satisfactorily and the work in miscellaneous drainage, of repairing, altering, constructing, cleaning and flushing sewers and drains was well done.

WATERWORKS.—*Tansa.*—The Tansa Waterworks, as a whole, were opened in Chinchpoogly in Bombay by the Marquis of Lansdowne, Viceroy and Governor-General of India, on the 31st March 1892, and the regular supply of Tansa water to the city commenced from that day. These works were begun in January 1886, and have thus taken six years to complete. The cost has been nearly one crore and a half. The supply from Tansa will be 20 or 21 million gallons of water daily instead of, as originally estimated, 17 million gallons. The dam at Tansa, the last stone of which was laid on the 3rd April 1891, is nearly two miles long, and it is the largest masonry dam in the world. The area of the lake is nearly six square miles. A rainfall of 40 inches is sufficient to fill the lake, so that even in the driest season no apprehension need be felt as to the sufficiency of the water-supply. The duct, which from the dam at Tansa to Chinchpoogly in Bombay, is 54 miles and 2,407 feet, contains about 23 miles masonry conduit, 27 miles of iron main of 4 feet diameter, about 4 miles of tunnels, and something less than a mile of iron girder bridges.

The total quantity of masonry in the dam is 11,029,022 cubic feet. The crest of the waste weir is at R. L. 405·00. This level gives a depth of 115 feet against the water face of the dam in the bed of the river, and a depth of 25 feet from crest of waste weir to sills of the lowest outlet sluices. The rainfall for the year was 82·66 inches, but on the 30th July 1891, when the rainfall had amounted to only 45·06 inches, the lake filled, and water flowed over the waste weir. At the end of the year (31st March 1892) the water stood at R. L. 401·74 or 3·26 feet below the crest of the waste weir.

The duct from Tansa to Ghat Kopar was finished by 1st February 1892. The total length of this portion of the duct is 45 miles and 864 feet. A favourable site on the sixth mile has been secured, where, in view of future possible filtering requirements, filter-beds can be constructed. The loss of water in transit is slightly over 1 per cent.

The duct—an iron main of 4 feet diameter—was finished on the 28th December 1891, or nine weeks before the contract time.

Except for malarious fever, which was prevalent, there was no serious illness on the works.

Vehar.—The rainfall for the year was 89·87 inches, or about 10 per cent. above the average. The lowest level of the water was on the 27th June, viz., 247·60 on T.H.D. The lake was benefited from the 2nd September to the 3rd October by the overflow from Tulsi, the quantity received being estimated at about 400 millions of gallons. The lake did not overflow, but on the 1st October it was at 263·30, or within 0·20 feet of the overflow level.

Pawai.—The pumping plant worked very satisfactorily, and about 150 millions of gallons of water were pumped into the Vehar mains. The rainfall was 89·20 inches. The dispute regarding the value of the land acquired for the works has been settled by the District Judge of Thana, who upheld the Collector's award of Rs. 1,12,432-15-6 for the land, plus 15 per cent. for compulsory taking, plus 6 per cent. interest for trees. The result of this case strongly illustrates the necessity of amending the present Land Acquisition Act. Boundary stones have been fixed to demarcate the land. The Tansa Waterworks have been completed, the necessity for maintaining the Pawai works has ceased, and consequently the pumping machinery will be disposed of.

Tulsi.—The rainfall was 99·47 inches. The lake commenced to overflow on the 2nd September 1891, and continued so to do up to the 2nd October.

Bhundarwada (John Hay Grant) Reservoir.—Works to reduce the leakage of the reservoir have been continued with satisfactory results. The joints of the walls in filters Nos. 2 and 6 have been pointed with Indian patent stone, and the same material has been used in pointing the joints of the walls of the channels, and in covering both the floors and the tops of the walls. The walls of the distributing basin have been re-pointed inside. The result of the work done at the filters has been the reduction of the leakage from 116,550 gallons to 5,857 gallons per day, that is, 95 per cent. of the leakage has been stopped.

Malabar Hill Reservoir.—The whole of the inner surface of the outer walls has been re-pointed with Indian patent stone, and the leakage has been much reduced. The turbine for the supply of the high level districts has worked satisfactorily.

Attention was called in the Corporation to the presence of crocodiles in the Vehar and Tulsi lakes, and payment of rewards for their capture and for finding of their eggs was sanctioned, but up to the 31st March 1892 rewards have been claimed only for two crocodiles. Attention was also called to the alleged presence of leeches in the water supplied to the town, and strainers were fixed to the service mains.

Distribution and Maintenance.—The total length of new mains laid during the year was about 14,100 feet, and the renewal of old mains 2,391 feet. The principal work was the laying of a new 24″ main from Chaopati along the Queen's Road to the Fort, for an improved supply to the Fort, Esplanade, and Colaba. The 32″ Vehar main under the site selected for the new Byculla Railway Station was diverted without a hitch of any kind. The new line, 2,442 feet in length, is along the DeLisle Road, from Clerk Road to Haines Road, and thence along Haines Road to the railway fence. The number of free supplies, dipping wells, drinking fountains, &c., was at the close of the year 172. The number of notices issued to owners on account of faulty taps and service pipes, &c., was 3,192 as against 3,180 in the previous year. There were in all 108 bursts of pipes, of which 68 were of 3″ and 27 of 4″ pipes, 698 new connexions were made, and 219 services disconnected, the net increase being 479, thus bringing the total up to 18,113, or an increase for the year of 2·7 per cent. The meters in use at the end of the year were 1,319 as against 1,184 for the preceding year, or an increase of 135.

Public health.

The state of the public health during the year under review has been unfavourable. The total number of deaths from all causes amounted to 23,847, equal to a death-rate calculated upon a population of 821,764 (the census of 1891) of 29·01 per 1,000 of population. This is an increase of 3,313 in the number of the previous year. The average number of deaths for the last five years is 22,138, or a death-rate of 25·69.

The returns of mortality from the chief death causes show a decrease in small-pox and accidents, and an increase in cholera, measles, fevers, phthisis, nervous system, respiratory system, diarrhœa and dysentery.

The death-rate was highest amongst the Bhatias, Hindu low castes, Jains and Lingaets, being 40·42, 42·50, 42·73, and 47·19 per 1,000 of population respectively. It was lowest among the Europeans, Jews, Parsis, Native Christians, and Brahmins, being 18·60, 20·91, 23·28, 23·52, and 23·66 respectively. The sections of highest mortality were Kamathipura 44·41, Parel 43·21, 2nd Nagpada 42·41, Khara Talao 40·28, Omerkhari 38·57, and Chuckla 38·26, and the lowest, Fort (South) 3·79, Mahaluxmi 13·16, Sion 15·81, Chowpati 15·72, Worli 16, Esplanade 17·38, and Walkeshwar 17·85.

A most serious public nuisance and cause of injury to the health of some people was caused by damaged and fermenting cargo being landed in July 1891 from the S.S. "Knight Companion." A quantity of this cargo—damaged grain and seeds—was found in the City and on the Port Trust estate. In consequence of the measures adopted, quantities were removed to the suburbs, but the nuisance caused by the offensive odour arising from that which remained in the City was so great, that the owners were called upon to destroy it, and in cases of refusal they were prosecuted and fined. In two cases—of wheat—it was however held by the magistrate that, although unfit for food, it could be made use of for "sizing," and consequently the cases were dismissed. No guarantee was, however, taken by the Court that the wheat would be used for "sizing."

Cholera.—The number of deaths from cholera was 164, or 62 more than in the previous year. Except the Negro-Africans, the death-rate was highest amongst the Europeans, viz., 1·59 per 1,000. But the whole of the deaths of the Europeans, 18 in number, occurred between the 11th and 14th September on the ships of the Royal Navy the "Marathon" and the "Redbreast." As far as could be ascertained, this mortality had its origin *outside* Bombay, for in the week in which these deaths took place on board these vessels, only six deaths from cholera occurred in the whole Island. The sections of greatest mortality were: the Harbour, Mahim, Mazagon, and Girgaum.

Small-pox.—The deaths from small-pox were 108, or 42 less than last year; and these occurred chiefly amongst Hindus of other castes, and Mussalmans. The death-rate was greatest in the districts of Sewri and Parel.

Measles.—There were 614 deaths from measles, or 435 more than in the previous year. The highest mortality was, as in the preceding year, amongst "Hindu out-castes." The death-rate was greatest in the districts of Parel, Tardeo, Dongri, Sewri, and Byculla. In the Fort (South) and Esplanade, no deaths from measles occurred.

Fever.—The deaths from fever were 6,837, or 435 more than last year. The greatest mortality was amongst Jains, Hindu low castes, and Lingaets. The death-rate was highest in the districts of Sewri and Parel.

Leprosy.—There were 106 deaths from leprosy, or 61 more than last year, or 41 more than the average. The large number of deaths from this cause is owing to a more correct registration of deaths consequent on the establishment of, and collection of lepers in, the Leper home at Matunga. The condition of the lepers in Bombay has attracted considerable public attention.

ABSTRACT OF REPORT OF THE HEALTH OFFICER OF BOMBAY FOR 1891.

(*Dr. T. S. Weir.*)

We have had in this year again an abnormal season, accompanied by an unfavourable state of public health. Up to as late as the third week of June under 2 inches of rain had fallen at Colaba, and none as far north as Byculla. The late coming of the season of rainfall caused much apprehension.

The effects of these abnormal conditions have had to be combated with, but other conditions arising within and out of the city have had also to be contended against. We have had to contend not only against unwholesome conditions from without, but against unwholesome conditions from within. The result of our labours has been the saving of lives and prevention of sickness. We need not be disheartened because the growth of the population has been quicker than the construction of new drains and that fearful nuisances have come with new buildings.

The deaths by place of birth do not approximate so closely as in the last year, 12,218 were born in Bombay, and 11,418 elsewhere, being a difference of 800. The deaths amongst Bombay-born are higher than in the preceding five years, while the deaths amongst strangers are also higher than in the five years before. The incidence of mortality by months shows a favourable mortality in January and February and an enhancement in March. The enhancement was due to an increased number of deaths from fevers, measles, and diseases of the respiratory system. In the first two months of the year a greater number of deaths amongst strangers than Bombay-born and from the end of February to the end of August amongst Bombay-born is observed. In the last four months of the year the annual migration of population affected the incidence of the mortality by place of birth—more strangers that Bombay-born dying.

A most serious public nuisance and cause of injury to the health of some people was caused by damaged and fermenting cargo landed in July from a steamer, the S.S. "Knight Companion." The nuisance was the most general and the most offensive I have known.

Return showing the Number of Deaths from Different Causes in 1891.

Causes of Deaths.	Number of Deaths.	Rate per 1,000 of Population.	Remarks.
Small-pox	108	·13	These calculations are made on the population of 1891.
Measles	614	·75	
Fever	6,837	8·32	
Cholera	164	·20	
Phthisis	3,132	3·81	
Diseases of the Nervous System	2,447	2·98	
„ Respiratory System	4,379	5·33	
Diarrhœa	1,029	1·25	
Dysentery	472	·57	
Accidents	364	·44	
All other causes except Still-born	4,301	5·23	
Total	23,847	29·01	

Chief Death Causes.—Analysing the mortality from the chief death causes, the results are an increase from measles, fevers, cholera, phthisis, diseases of the respiratory system, diseases of the nervous system and diarrhœa.

As in preceding years, the mortality of male children under 1 year (3,984) is higher than the mortality of female children (3,434), while from 1 to 4 years more females die. From 5–9 years more males died, but over 9 and up to 24 the female mortality is more than double the male. Over 24, although the female mortality is much greater it

declines at each period, until from 40–44 the male mortality is higher than the female. This high female mortality appears to be connected with early marriage and cares of womanhood. We have had the same results in all former years, whether on the figures of the Census of 1881 or 1891.

In a year when measles and febrile affections of catarrhal type are prevalent a high mortality amongst children is to be expected, and further a high female mortality during child-bearing periods indicates conditions unfavourable to the survival of infant life where the care of infant life depends on feeble mothers.

The mortality by class gives instructive results. The mortality of Europeans (18·60) is a little higher, 0·4, while the mortality of Eurasians (25·40), Jains (42·73), and Jews (20·91), is lower than in 1890. The mortality in the following communities is higher than in the last year:—Mussulman (38·29), the mass of the Hindu population (25·06), Hindoo low castes (42·50), and Parsees (23·28). The general mortality of the Hindu population is 26·08, varying from 23·6 amongst Brahmins to 47·1 amongst Lingaets.

The causes affecting the mortality amongst the poor classes may generally be stated to be the overcrowding of life, imperfect ventilation of room, and imperfect drainage of house. Just as we find the greatest number of cases of cholera on ground-floors, so we find the greatest sickness and mortality amongst the classes who live most on ground-floors.

Kamathipura is the section of highest mortality (44·41), Parel being second (43·21), Second Nagpada third (42·41), Khara Talao fourth (40·28), Oomerkhari fifth (38·57), and Chuckla sixth (38·26). If the mortality in 1891 is contrasted with 1890 it will be observed that there are certain sections in which the mortality is greatly enhanced.—Sections of continuous high mortality.—These sections are Kamathipura, Parel, Second Nagpada, Khara Talao, Oomerkhari, Chuckla, and Mandvi. The death causes from which the mortality of Kamathipura is in excess are diseases of the respiratory system and measles. The excess death-rate from diseases of the respiratory system and measles indicates the insanitary conditions in this section.

Measles. The mortality from measles is 435 more than in the last year, and 183 more than the average, 614 deaths were registered. The prevalence of catarrhal affections with diseases of the respiratory system occurring at an abnormal season greatly influenced the mortality from measles. The highest mortality occurred in the first three years of life, the mortality of males being 9·56 and females 8·96.

Small-pox. From small-pox 108 deaths were registered, being 42 less than in the last year and 105 less than the average. Although the mortality from small-pox was less than in the year before, in August I predicted that cases of small-pox would be prevalent towards the end of the year, and that probably an epidemic would occur in the cold season. In the second quaterly report I wrote "I apprehend that small-pox will be prevalent during the next cold weather," and in September I informed the Standing Committee that they were perfectly certain to have severe sickness in this part of the country between this and next year.

Fever. The mortality from fevers (6,837) is higher than in the last year, and higher than the average, being 348 more than in 1890, and 470 more than the average. The average, it must be remembered, includes a period of exceptionally low mortality.

The greatest number of deaths occurred in September, March, August, and December. Of the total deaths from fevers, 5,527 were referred to remittent fever, being 164 more than in the last year and 607 more than the average; 382 were ascribed to ague, being 67 more than in 1890 and 121 more than the average; 910 were ascribed to simple continued fever, being 116 more than in the last year and 258 less than the average. The deaths from enteric fever are 1 more than in the last year and the same as the average. 18 deaths were registered from enteric fever.

The mortality by districts is suggestive. In two districts of the suburbs in which the mortality ought to be low, it is high; these two districts are Sewri (14·34), and Parel (15·13). The highest mortality from fevers also occurred last year in Parel, and the opinion which I gave in that annual report has turned out more or less correct. I wrote: "Taking the figures of the census of 1881, the highest mortality occurred in "Parel. This high mortality, although 64 less than in 1889, is in some measure due to "expansion of population, for there has been a great increase of population in Parel, "and it is also in some degree influenced by foul conditions from imperfect drainage "and absence of drainage. The mortality in Mahalaxmi is chiefly ascribable to "increase of population." This opinion on Mahaluxmi has turned out correct. In sections so densely populated as Mandvi (12·78), Khara Talao (11·61), Chuckla (11·02),

we have a high fatality; we can only expect a high mortality in these densely crowded localities, and the mortality is high. Whether in the sections or in the buildings, there is little space for ventilation. They all have densely crowded houses, densely piled so that the space to each person is only—Mandvi 21·36 square yards, Khara Talao 7·45 square yards, Chuckla 7·75 square yards, and in Mandvi there are tenements having over 700 people. In one chawl in Mandvi, to which cases of cholera were taken, we counted over 700 people. Although Parel and Sewri are portions of the suburbs, yet amidst open space, of which there is still much in both sections, there are still very crowded chawls filled with mill-workers.

The highest mortality occurred amongst two small fluctuating communities—Negro-Africans (102·73), and Lingaets (15·30). It is possible that the mortality in these small communities has been influenced by fluctuation of population. Although the total mortality from fevers is higher, the mortality in the mass of the Hindu population and amongst Mussalman and Jews is less.

From cholera, 164 deaths were registered, being 62 more than in the last year, and 82 less than the average. 229 cases were reported, and 164 ended fatally, giving a mortality of 71·6 per cent. Of the cases more than 68 per cent. were males; 157 males and 72 females were reported to have suffered. The proportion of mortality amongst males being 68·7 per cent., and females 77·7. The percentage of deaths to attacks is less than in the last year. Cholera.

As in previous years, most cases occurred from the population born outside of Bombay, and amongst these cases the highest mortality will be observed. Of the total cases 209 were born out of Bombay, and 150 died:

Birth place.	Attacks.	Deaths.	Percentage of Deaths to Attacks.
Bombay - - -	18	12	66·6
Elsewhere - -	209	150	71·7
Unknown - - -	2	2	100·0

If the cases are grouped according to period of residence, it is found that 70 of the cases were under three months, and 26 under six months in this city :—

Duration of Residence in Bombay.	Attacks.	Deaths.
Under 3 months - -	70	39
Under 6 months - -	26	20

The mortality, according to the source of water supply, is interesting. It will be observed that 16 people who used well water took ill from cholera, and that 15 died, that is, nearly 94 per cent.; although the number of persons who used well water are few, the mortality is higher than amongst persons who used Vehar and Tulsi.

For 1890.	Attacks.	Deaths.	Percentage of Deaths to Attacks.
Vehar and Tulsi water consumers -	196	138	70·4
Well-water drinkers - - -	16	15	93·7
Unknown - - - -	17	11	64·7

The death-rate amongst Europeans is high, 1·59 per 1,000, owing to 18 deaths occurring in the Harbour between the 11th September and the 14th September on the following ships :—"Marathon" and "Redbreast" of the Royal Navy.

When cholera is prevalent only a small mortality occurs at early periods of life, but it is remarkable that in this year no deaths occurred during the first 3 years of life. The male and female mortality are equal (0·20), while in the previous 2 years the male mortality was highest.

The mortality by section is interesting. In the last annual report I wrote :—"I "hope for a reduction of mortality in Girgaum generally, as there has been through "drainage and sanitary work, a reduction of mortality in localized portions of this

"district where cholera was once endemic. In Girgaum, as in other portions of the "city where buildings have been improved and more opulent classes attracted and "cesspools removed and drains constructed, fewer cases of cholera occur. In "'Wadies,' where once epidemics were expected every year and preparations made for "them, cases seldom now occur, and when they occur others do not follow. That, "which I may describe as epidemic attraction, has ceased."

This reduction has occurred, and further, in Fanaswadi, where cholera was ever prevalent, no deaths occurred. The freedom of Fanaswadi this year from cholera is remarkable. In the Annual Report for 1888 I thus referred to cholera fatality in Fanaswadi. In 1888 I may mention cholera was epidemic, 379 deaths having occurred.

I thus referred to the incidence of cholera in Girgaum and Fanaswadi. "In the "previous Annual Report I referred to the decrease of cholera in Girgaum and in "Fanaswadi. In this year there has been a resuscitation of cholera in Girgaum, but "in Fanaswadi the prevalence of former years has not occurred. In one portion of "Fanaswadi, in which cholera has been frequently epidemic, and in which many cases "have always occurred when cholera was prevalent in Bombay, very few cases of "cholera have occurred for some years. I refer to Zaoba's Oart, in former years "mentioned in all reports as a place of cholera fatality. The improvements have been "the removal of huts, the arrangement of other huts in lines, the construction of open "drains, and the removal of cesspools. It is instructive that while the population has "increased the number of cases of cholera has yearly decreased."

Phthisis. The mortality from phthisis is 404 more than in the last year, and 405 higher than the average. The mortality is highest, as in the five years before, in the same district 2nd Nagpada (7·08). This district, whose condition and whose house crowding, the greatest in Bombay, I have before described, needs urgently a system of drainage to carry away the refuse of the population. If the 8 sections of highest mortality from phthisis are taken, it will be observed that they are sections of dense compression of house and population.

Respiratory system. To diseases of the respiratory system 4,379 deaths were ascribed, being 1,044 more than in the last year and 562 more than the average. Of the deaths referred to diseases of the respiratory system, 2,805 were ascribed to bronchitis, being 797 more than in the last year, and 429 more than the average; 963 deaths were referred to pneumonia, being 157 more than in the last year and 142 more than the average.

Nervous system. From diseases of the nervous system 2,447 deaths were registered, being 511 more than in the last year and 449 more than the average.

Births. During the year 15,518 living and 1,394 still-born births were registered. Of the living births, 7,964 were males and 7,554 females. The proportion of males to females by the last census was 170·60 to 100, but assuming that there were 100 males to 100 females, the birth-rate would be equal to 32 per 1,000.

APPENDIX.

No. 1.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner with the Government of India for 1891.

1. *Alteration of Statistical Groups of Stations.*—This Report, as usual, contains much valuable and interesting information regarding the European troops, the Native troops, and the prisoners throughout India. It also summarises in convenient form the facts concerning the general population of the country which have been extracted from the Provincial Sanitary Reports, and which are considered under the great general heads of Vital Statistics, History of the Chief Diseases, Vaccination, and Civil Sanitary Works. One important change has been made in dealing with the statistics of sickness and mortality among troops and prisoners, and that is a re-arrangement of the stations and jails in new geographical groups. The old grouping was devised by the late Dr. J. L. Bryden, the first statistical officer to the Government of India, who did so much in originating and improving the statistics of both troops and prisoners. His aim was not only to show the results by presidencies and individual stations, but also to take the stations in groups which should be illustrative as far as possible of areas subject to similar conditions of climate, and also to similar epidemiological influences, more especially as regards cholera, the course of which he believed to be regulated in great measure by geographical position. The new grouping, which differs materially from the old, has been arranged by a Committee, and is to be adhered to by both Medical and Meteorological Departments. We may glance at what these new groups are, and how far the various bodies concerned are represented in each. The number of stations occupied by European and Native troops in each of them, and the jails they each contain, are shown in the following statement:—

No. and Name of Group.	European Troops.		Native Troops.		Prisoners.	
	No. of Stations occupied.	Strength.	No. of Stations occupied.	Strength.	No. of Jails.	Strength.
No. I.—Burma Coast and Bay Islands (includes Andamans, Rangoon, &c.).	3	1,624	4	2,111	14	18,516
No. II.—Burma inland (includes Thayetmyo, Mandalay, &c.)	6	2,711	29	8,261	18	4,504
No. III.—Assam (includes Silchar, Dibrugarh, Manipur, &c.)	—	—	5	2,157	8	981
No. IV.—Bengal and Orissa (includes Fort William, Barrackpore, Cuttack, and many of the jails of Lower Bengal).	3	2,207	5	3,125	33	10,217
No. V.—Gangetic plain and Chutia Nagpur (includes Dinapur, Lucknow, Allahabad, and many jails of Behar and Oudh).	9	6,714	8	7,079	45	23,111
No. VI.—Upper Sub-Himalayan (includes Muttra, Delhi, Mean Meer, Rawalpindi, and many of the Punjab jails).	15	12,711	14	14,097	34	14,348
No. VII.—Indus Valley and North-Western Rajputana (includes Peshawur, Hyderabad, Kurachee, &c.).	7	4,627	14	15,298	14	6,189
No. VIII.—South-Eastern Rajputana, Central India, and Gujerat (includes Agra, Nasirabad, Mhow, &c).	10	5,868	21	14,027	12	4,473
No. IX.—Deccan (includes Poona, Belgaum, Secunderabad, and many jails of the Central Provinces).	12	9,490	25	20,265	32	8,381
No. X.—Western Coast (includes Bombay, Cannanore, &c.) -	5	1,304	8	3,731	9	2,391
No. XI.—Southern India (includes Madras, Bangalore, Bellary, and a number of the Madras jails).	6	3,579	9	7,742	20	7,113
No. XII.—Hill Stations (includes Quetta, and the hills of all three Presidencies).	24	9,082	14	12,808	9	739
No. XIIa.—Hill convalescent Depôts - - - -	9	2,577	—	—	—	—

2. *Suggestions in regard to these Groups.*—In the above only one or two of the most important places in each group have been mentioned. A full detail of all the stations and jails in each can be seen in Table XXII. for European troops, XXIV. for Native troops, and XVI. for prisoners. In table Y, at the end of the volume, a comparison is made as regards the amount of sickness and mortality among troops and prisoners in the various groups and the proportion in which different diseases contributed to the results. The grouping of stations is no doubt very desirable, and a comparison such as Table Y institutes is also instructive; but, in making such a comparison, it must be borne in mind that it is by no means exact. The areas concerned in each case are nominally the same, but the places within

these areas are very different. As a rule, the jails greatly outnumber the stations occupied by the troops, and these, again, in many cases are spread over large tracts of country where neither European nor Native soldiers are quartered. Moreover, the stations occupied by European troops differ much from those occupied by Native troops within the same area. We have only two suggestions to make in connexion with this important question of geographical grouping. The first is that the numbers attached to the groups should be the same for all the three bodies concerned—European troops, Native troops, and prisoners. As it now stands, owing to the absence of all European troops in Assam, the numbering of the groups for them varies from the numbering adopted for the other two, and this causes some confusion. The other suggestion we would make is that the area included in each geographical group should be clearly marked out on the map by a thin red line, and the number of the group clearly indicated in the same colour. This could easily be done for all the groups except the hill stations and hill convalescent depôts, which are scattered over the continent. The change has in all probability already suggested itself to the Sanitary Commissioner. The map attached to this Report appears to be the old map, and bears on it the numbers of the areas according to which the statistics of European troops were formerly divided. The preparation of a new map would, no doubt, take time, but the reproduction of the old map, if unavoidable, might have been accompanied by an explanatory note so as to prevent confusion.

3. *General Results.*—The meteorology of the year was abnormal, especially as regards the rains, which were very late and deficient over great part of India. In the tables appended to Section I., the monthly records of barometric pressure and humidity during 1891 are compared with the results of previous years, but no such comparison is made for the rainfall and temperature. The figures for 1891 alone are given, and without some standard by which they may be judged they lose much of their value. The tables for temperature and rainfall might with great advantage be amended so as to correspond in this respect with the other two tables. The general facts of the year's sanitary history are that among European troops, owing in the main to the great diminution of influenza and venereal disease, sickness was less than in 1890, but, owing to the increased prevalence of cholera, the mortality was greater. Among Native troops, also, sickness was considerably less, but the mortality was slightly higher. The same remark holds good for the prison population. Of the health of the people generally we have already spoken in our separate memoranda on the Provincial Sanitary Reports, but we may here repeat the main facts. Over great part of India the year was very unhealthy, and cholera was very prevalent. This may be said especially of the Lower Provinces of Bengal and of the Madras Presidency, including the town of Madras, where the death-rate was very high, and also of Assam. The same remark applies, though in a minor degree, to the Central Provinces, the Hyderabad Assigned Districts, and Rajputana. In the Punjab the death-rate, though still high, showed a great improvement on the results of 1890. In the North-West Provinces and Oudh, in spite of cholera prevalence, the health of the people was better than usual.

4. *European Troops.—General distribution of sickness and mortality.*—Among the 67,030 European soldiers who garrisoned India during 1891 the cases of sickness equalled 1,379, the number constantly sick 79, and the deaths 15·89 per 1,000. As regards sickness, these figures are favourable when compared with those of former years. The mortality was somewhat higher than that of 1890 (13·84), or of the ten-year period 1881–90 (14·24), but under that of the previous ten-year period 1870–79 (19·34). The statistics of 1891, according to Presidencies, stand thus, those of Quetta and Burma, which are included in the Presidency totals, being added for separate comparison:—

European Troops.

	Strength.	Ratios per 1,000 of Strength.				
		Admissions.	Constantly Sick.	Deaths.	Invaliding.	Total Loss.
India	67,030	1,379	79	15·89	27	43
Bengal	40,994	1,394	80	16·86	25	42
Madras	13,324	1,304	82	14·49	31	46
Bombay	12,713	1,409	73	14·24	29	43
Quetta	2,162	1,621	62	13·88	—	—
Burma	4,623	1,589	92	20·12	—	—

A comparison of the three Presidencies shows that in Bengal the mortality was highest, that in Bombay the admissions were highest, and that in Madras the daily sick-rate was highest. Compared with the former year, Bengal and Madras exhibit a diminution of sickness, with some increase of mortality. In Bombay also the constant sick-rate was lower than in 1890, but the admissions into hospital were more numerous, and the mortality rose from 9·56 to 14·24. [By a printer's error this is given in the statement at page 13 as only 4·24, and we may also note the trifling error that in the statement at page 11 the strength of the European Army of India should be 67,030 and not 67,000.] At Quetta the year was unhealthy. The admissions rose from 1,099 in 1890 to 1,621 in 1891, and the death-rate from 9·41 to 13·88. Among the troops in Burma, on the other hand, there was some diminution both in sickness and mortality. The statements which are given at page 15 show very clearly what proportion of the sickness and mortality in each Presidency was

contributed by the chief diseases. With regard to the valuable and interesting data which these statements contain it is sufficient for the present to note that in all three Presidencies venereal diseases were the chief causes of admissions into hospital, and that in all of them ague follows next at a varying interval. Among the causes of death in all three Presidencies enteric fever stands highest, then cholera, and then hepatic disease. The results may be studied in greater detail in Table XVIII., where the causes of the sickness and mortality in each of the new geographical groups, and the ratios due to each disease are conveniently ranged side by side.

5. *The Influenza Epidemic.*—In last year's Memorandum we remarked at some length on the remarkable epidemic of influenza which was so widely spread over India in 1890. Its wide prevalence, its varying degree of intensity in different parts of the country, the limitation of the epidemic to certain months of the year, and its disappearance, which was just as difficult to account for as its coming, all demanded attention. During 1891 influenza was again reported at many stations, and there were decided signs of another epidemic. Its intensity, however, was much less than it had been in 1890, as evidenced both by the fewer places attacked, and by the much diminished number of cases. We append a table to continue the history of the disease during 1891 in the same form as that employed to illustrate it in 1890. It has been prepared from the data contained in Tables XXIII. of European troops, XXV. of Native troops, and XIX. of jails.

Influenza among Troops and Prisoners.

——	Strength.	Monthly Number of Admissions into Hospital.												Ratio per 1,000.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
European Troops :														
Bengal	40,994	1	—	1	2	8	62	100	27	20	2	—	15	5·8
Madras	13,324	—	—	—	14	69	22	1	—	—	—	—	1	8·0
Bombay	12,713	—	—	—	—	—	7	11	2	—	—	2	5	2·1
Native Troops :														
Bengal	66,230	—	—	1	—	13	204	99	106	51	22	15	55	8·5
Madras	26,088	—	—	—	—	—	—	—	—	—	—	2	—	·1
Bombay	23,780	—	—	—	—	91	55	24	—	—	—	—	119	12·2
Prisoners :														
Bengal, Madras, Bombay	101,019	3	152	91	19	32	119	459	285	266	72	32	388	19·0

The statistics of influenza among the prisoners are not given by Presidencies for 1891. The limitation of the epidemic as to time was not nearly so marked, especially in the case of the prisoners, as it had been in the year previous, though the epidemic was much less severe than in 1890. The area embraced was just as wide, extending as it did from Burma in the east to Aden in the west, and from Cannanore to the north-west frontier. As in 1890 the women and children of European regiments suffered very slightly from it. In 1891 it was indeed confined to a very few isolated cases among them.

6. *Considerable Diminution of Venereal Diseases.*—As we have already seen, venereal diseases stand at the top of the list in all three Presidencies as a cause of admission into hospital, and they therefore demand special attention, particularly with reference to the influence upon them of lock hospitals. It is some satisfaction to find that in spite of the abolition of lock hospitals the admission rate for these diseases, high as it is, shows a considerable reduction on that of the year previous. In 1890 the rate for the European Army in India, as a whole, was 503 per 1,000, in 1891 it fell to 400. It is further to be observed that the decrease was not confined to any one Presidency, but extended over them all. The results for the two years were as follows :—

	India.	Bengal.	Madras.	Bombay.
1890	503	504	491	515
1891	400	395	402	417

Owing to the change in the areas, it is not possible to compare the results of the two years in the geographical groups; but by taking the details given in Table XXVIII. of 1891 in conjunction with the similar table of 1890, numbered XXVII. in the Report for that year, we can study the data on which the general averages above noted have been framed, and we find that the reduction of venereal diseases has not been confined to a few places, but spread over a great many. If we take the cantonments of the Bengal Presidency, which are garrisoned by 1,000 men or more, as

may be seen in the following list, we learn that of the 13 places which come under this category, all but three, marked I., show a decrease, and in several of them the decrease is very marked:—

Station.	Admissions from Venereal Diseases per 1,000 of strength.	
	1891.	1890.
Bengal:—		
Fort William, I.	622	608
Lucknow	330	523
Bareilly, I.	664	526
Meerut	413	573
Umballa	341	395
Ferozepore, I.	277	260
Mean Meer	404	414
Sialkot	451	652
Rawalpindi	383	515
Peshawur	189	418
Agra	449	576
Chakrata	250	373
Quetta	184	263
Madras:—		
Belgaum, I.	439	425
Mandalay	368	787
Bombay:—		
Kurrachee	317	412
Mhow	360	499
Poona	495	571
Bombay (Colaba) I.	591	513

We have added a few of the more important places of the Madras and Bombay Presidencies which bear out the same general fact. Secunderabad and Bangalore would also have been included, but, unfortunately, the garrisons of these places have been sub-divided in the statistics of 1891, so that no comparison can be made with those of 1890. It is satisfactory to find that of the reduction in all three Presidencies great part represents a reduction in the more serious forms of disease.

7. *Venereal Diseases in relation to Lock Hospitals.*—But although the reduction in venereal diseases so far as it goes is a satisfactory feature of the year, they were still a very grave source of inefficiency in the European Army of India, and any measures suggested for preventing them therefore deserve serious consideration. It appears from this Report that a special investigation of the venereal statistics for many years has been made. The figures are not given. They were under the consideration of the Government, but the chief results arrived at are noted, and as the matter is of great importance we shall quote them in full. They are—

"(1) Within at least three years of institution lock hospitals produced a decided effect in checking venereal disease in the stations where they were opened.

"(2) When certain lock hospitals were experimentally closed the venereal ratio for these stations rose to a great height as compared with the ratio of those stations where lock hospitals were retained.

"(3) On the abolition of lock hospitals there was a special rise of the venereal ratios for those stations that had had lock hospitals.

"(4) Taking the period during which lock hospitals were in activity as a whole the ratio for stations with lock hospitals was lower than that for stations without lock hospitals, although the ratio for the former class of stations had been higher than that for the latter class before the institution of lock hospitals.

"(5) When stations are divided into those that had and those that had not lock hospitals it is found that venereal ratios rose in both, but less and less rapidly in the former than in the latter.

"(6.) A very probable cause of the increase of venereal ratios in both classes of stations since 1877 was the increased importation of fresh young unmarried men, the lock hospitals existing in certain stations having there exerted a certain restraining influence upon the increase."

Of the fact that the short service system has tended greatly to increase venereal diseases we have no doubt, nor can it be questioned that the lock hospitals were productive of some good, but we are not satisfied that the amount of this good was by any means so decided as the above conclusions would make out. The idea that a lock hospital once established in a cantonment can effectively control the amount of venereal disease among the European troops quartered there has been only very partially realized in Indian experience. As we pointed out in reviewing the Report of the Sanitary Commissioner for 1889, "the statistics of 1866, before lock hospitals were established, are much more "favourable than those of 1884, when these hospitals had been at work for 19 years." No doubt the short service system had meantime come into play, but whether this was the cause of the increased prevalence of venereal diseases, or whether it was only one of the causes, the practical conclusion remains the same, that the cause or causes to which it was due was apparently but little amenable to lock hospitals.

8. *The Voluntary Venereal Hospitals.*—Of the voluntary hospitals which the Army Sanitary Commission recommended many years ago as places in which women suffering from disease might find shelter and medical treatment only incidental mention is made. It does not appear where they

had been established, when they came into operation, how many women had availed themselves of each of them, what forms of disease they were labouring under, and what relation these bore to the forms prevailing among the garrison. It is very desirable that in future reports full particulars on all these points should be given, as without them it is impossible to form an opinion as to the benefit derived from the voluntary hospitals. How far the general reduction of venereal diseases in 1891 was due to them there are not materials in this Report for judging.

9. *Enteric Fever the Chief Cause of Mortality.*—As venereal diseases claim special attention because they are the chief cause of admissions into hospitals, enteric fever claims special attention because it is the chief cause of deaths. In 1891 the mortality it occasioned in the European Army of India was 5·73 per 1,000, or more than it had ever been previously. There is evidently much divergence of opinion and of practice in the nomenclature of Indian fevers, and it is therefore less likely to lead to error if we consider them all together as they are shown side by side for the three Presidencies in the statement given at page 23. Going back as this statement does to the period of 1870–79, we find that in Bengal the annual admissions from enteric fever have steadily increased from 5·3 per 1,000 to 24·9 in 1891, while the deaths under this head have increased from 2·28 to 6·64; while, on the other hand, there has been a reduction, though by no means to the same extent in the mortality recorded under other fevers. The most important fact remains that from all fevers taken together the annual death-rate has risen in Bengal from 4·02 in 1870–79 to 7·20 in 1891; in Madras from 2·04 to 4·29, and in Bombay from 2·89 to 5·74. No new light has been thrown on the cause of the increase. As usual one fact is very plain, that severe fevers chiefly attack the young, the unseasoned, and unacclimatized. In 1891 the liability of a soldier of 24 and under to die from fever in India is represented by a percentage of 68·65, whereas in the soldier between 30 and 34 years of age this percentage of liability is only 5·35. If the periods of residence be taken, the contrast is even more striking, for while the percentage of liability during his first two years is represented by 64·19, in the sixth to the tenth year it is only 2·34. These and similar facts which are repeated year after year in the history of the British soldier in India admit of no dispute, and they tend to show that the strain of an entirely altered climate and surroundings, so different from anything to which his constitution had hitherto been accustomed, tells on the young soldier new to India, and that the great preventive is to improve the sanitary conditions of his new abode as far as possible. It must also be borne in mind that when a young European soldier lands in India the effects of changes incidental to the action of climatic conditions are added to those which are incidental to the human body at one particular period of its own development, and that his personal hygiene consequently requires more than usual care whilst his constitution is accommodating itself to its new surroundings.

10. *Cholera.*—Although cholera was much more prevalent among European troops than it had been in 1890, the number of cases when we consider the widespread epidemic, as shown on the map, was not large. The total was 252, of which 168 proved fatal. These were distributed over the Bengal and Bombay Presidencies in almost equal proportion; in the Madras Presidency the proportion of cases and deaths was much less. The special table devoted to cholera shows that the 252 cases were spread over a very wide area, embracing such far distant places as Mandalay, Quetta, and Bangalore. In all, 29 stations suffered, but in many of them the disease was limited to one or two attacks. Allahabad with 51 cases in May, Cawnpore with 15 in June, July and September, Nasirabad with 29 in August and September, Peshawur with 20 in September, October, and November, and Quetta with 24 in August and September, present the most noteworthy outbreaks, and a description of them would have been of interest both as regards the course of the disease and the measures taken to arrest it. In Section VI. of the Report in which the history of the chief diseases during the year is discussed, some further particulars are given regarding sanitary defects reported in connection with cholera outbreaks, and also as regards the number of attendants attacked and the effect of moving into camp. Of defects the most important noted is the unsatisfactory state of both drainage and conservancy of the Cawnpore bazaar. Of 628 attendants on 374 cholera cases among European troops only four were attacked, or only ·64 per cent. This return, which is given at page 125, it is presumed includes statistics of the previous year, as the total number of cases of cholera among European troops in 1891 was 252. But however that may be, the immunity of the attendants is most remarkable, and ought to set at rest the fears which are so generally entertained of even approaching near any one suffering from cholera. If the statement be taken as a whole it appears that of 3,063 attendants on 1,473 cholera cases among troops and prisoners only 56 were attacked, or a percentage of 1·83, and small as this proportion is there is not the smallest evidence that the 56 attacked were attacked because they had been in attendance on persons suffering from cholera. The results of moving into camp continued to be generally satisfactory, both as regards the speedy cessation of the outbreak and the general health of the troops. Of 96 parties who moved from 16 cantonments 81 had no further cases. Of the remaining 15 parties among whom 58 cases occurred after moving further particulars might have been given with advantage, especially as regards the degree of promptitude with which the movement was made, for on this success greatly depends.

11. *Sanitary Defects in Cantonments occupied by British Troops.*—There are many other points of interest on which we might remark, but they are, as a rule, clearly and fully dealt with in the Report, and we shall pass on to consider what light is thrown on the causes of disease, especially in those places where British soldiers suffered most. At page 155 a summary is given of the Annual Sanitary Reports on the cantonments of the Bengal Presidency, and in the last column information is contained concerning "diseases prevailing, sanitary defects, suggestions, improvements, &c." In other columns the ratio of admissions and deaths in each cantonment are shown both for European and Native troops. This summary would be rendered still more valuable if it were extended so as to

include all three Presidencies, and if more complete information were given in the last column regarding "sanitary defects." In several cantonments mention is made of defects in drainage and water supply and other matters; but in many of them where the sick list was high, and the mortality heavy, nothing is said of the local disease causes to which these results seemed to be due.

12. *Native Army. General Sanitary History in* 1891.—The extent of sickness and mortality in the Native Army of India is shown in the following statement:—

—	Total Deaths per 1,000, including Absentees.	Average Strength present with Regiments.	Ratio per 1,000.			
			Admissions into Hospital.	Constantly sick.	Deaths from Cholera.	Present Deaths from all Causes.
Bengal Native Army - - -	18·10	66,230	1,020	35	3·73	17·32
Madras „ „ - - -	27·28	26,088	1,017	45	1·99	20·05
Bombay „ „ - - -	12·34	23,780	978	31	1·26	9·63
Central India and Rajputana Regiments -	8·96	5,175	628	19	·58	7·73
Hyderabad Contingent - - -	7·83	7,063	529	18	1·13	6·09
Native Army as a whole - - -	19·34	128,600	972	35	2·64	15·44

Compared with 1890 sickness had much diminished. This was in large measure due to the great reduction in cases of influenza, with its respiratory complications. Cholera caused double the mortality it did in 1890, but, owing to diminution under other heads, the death-rate, though high, was somewhat under that of the previous year. But these, which are the general results for the Native Army all over India, are made up of very different elements in its component parts. In Madras, and also in Bengal, sickness and mortality were greatly in excess of what they were among the other bodies of men. The unsatisfactory results in Madras were due in great measure to the unfavourable returns from the portion of the troops serving in Burma. Of these troops Madras furnished 83 per cent., the rest being drawn from Bengal. In the native garrison of Burma, taken as a whole, the admissions into hospital equalled 1,676, the constant sick-rate 76, and the death-rate 36·31 per 1,000.

13. *Sanitary Defects in Cantonments occupied by Native Troops.*—The sanitary sheets which are summarized in the section devoted to Native troops refer to all the three Presidencies, and show the sickness and mortality in each regiment in conjunction with information regarding local disease causes. In many instances the information given under this last head might be more full. When sickness prevails as it did in many of the regiments in 1891, the great object of the Medical Officer, and of all the sanitary authorities, should be not only to provide for the proper treatment of the sick, but also to make diligent search for the cause of the sickness, so that it may, if possible, be removed. In the summary of sanitary sheets there are numerous instances of local defects which are removable. The very great evil of overcrowding existed in many stations; in some it was only slight and temporary, in others more serious and long continued. Defects in drainage and in water-supply, insufficient or too free ventilation, under-feeding, want of fresh vegetables, and severe duties, are all mentioned as causes of sickness. These and other evils are, we doubt not, being dealt with as far as possible, but we wish to record our sense of the great practical importance of these regimental sanitary sheets and cantonment sanitary reports, and the advantage to be derived from having them very carefully prepared.

14. *Military Sanitary Works.*—During 1892–91 the sum of Rs. 98,32,152 was expended on works designed for the health and comfort of the troops in India, but information as to the exact nature of these works was not yet available when the Report was prepared. Details of the expenditure on similar objects during the previous year have been furnished. They consisted in the main of barrack and hospital accommodation, but some expenditure was also incurred in connection with improvement of the water supply at a number of places—Allahabad, Dehra, Rawalpindi, Murree, Quetta, and Wellington. At Quetta and at Secunderabad also the drainage had been improved.

15. *The Jails of India.*—In regard to the jails the first point to be noted is that there was a considerable increase in the prison population compared with that of the year previous. Over India it rose from 96,610 to 101,019, and this quite accords with the ordinary experience in that country, that when food prices are high the jails are generally overflowing. The statement given at page 84 affords interesting data regarding the proportion of prisoners to the general population in the different provinces, and the great variations there presented are worthy of notice, ranging as they do from 2·3 per 10,000 of the people in Bengal proper to 6·1 in the Punjab. The statistics for India as a whole show that there was a considerable diminution in the amount of sickness, to which the decrease in influenza materially contributed, but that the death-rate was much the same as in 1890 (31·89 per 1,000). The results, according to geographical groups, are given in Tables I. to XIII., and these, again, are summarized in No. XIV., the monthly sick-rate, and the causes both of admissions and deaths in each of them being placed side by side so that they can be easily compared. It will be more convenient, however, to consider the jails by administrative areas as shown in the body of the Report, and then consider any of them in which there was excessive sickness and mortality in connexion with the information concerning their condition which is contained in the summary of the sanitary sheets. For practical purposes these are the most important part of

the whole Report. Before discussing them, however, we may tabulate the general results for each of the provinces in 1891.

Province.	Average Strength.	Ratio per 1,000.				
		Admissions.	Constantly Sick.	Deaths from		
				Cholera.	Dysentery and Diarrhœa.	All Causes.
Andaman Islands - -	11,576	1,588	59	—	13·05	41·47
Burma - -	11,444	896	35	4·54	7·78	30·23
Assam - - -	1,106	2,052	70	9·95	31·64	66·91
Bengal - - -	15,069	1,134	39	3·58	8·89	31·39
North-West and Oudh -	27,809	752	34	3·52	7·41	27·83
Punjab - - - -	12,292	1,742	40	·98	4·72	28·31
Bombay - - - -	7,265	691	27	·41	4·96	33·45
Berar - - -	1,063	438	14	—	1·88	11·29
Central - - - -	4,675	791	28	—	10·27	30·37
Madras - - -	8,313	687	24	9·86	10·94	38·25

16. *Results as compared with former Years.*—We may glance at some of the more important results in the above statement, and see how they stand when compared with those of other years. In the Andamans the health of the convicts as represented by the admission-rate showed much improvement, but the constantly sick-rate was the same as it had been in 1890, and the mortality, 41·47, was very high. (Through a misprint in the statement regarding the Andamans on page 85, this is entered as only 4·47.) The Burma jails also show diminished sickness and increased mortality, but the excess here was comparatively slight. In the Assam jails there was great sickness, the admission-rate having been 2,052, and the mortality very heavy (66·91). Bengal, in spite of the unhealthy character of the year in that part of India, presents a favourable return, and the same is to be said of the North-West Provinces, the Punjab, and, in a still more marked degree, of Berar, where there was the minimum admission-rate (438) and the minimum death-rate of only 11·29. In the Bombay jails, with diminished sickness, there was an increase of mortality, and the same remark applies to the other two provinces—the Central Provinces and Madras.

17. *Individual Jails in which there were Excessive Sickness and Mortality.*—The Sanitary Commissioner has specially noted the jails in each administration where the prisoners suffered more than usual, and we shall refer to a few of these, endeavouring at the same time to connect their unfavourable history with insanitary conditions as set forth in the jail sanitary sheets of which a summary is appended to this section of the Report. In Port Blair in the Andamans, the defects noted are faulty ventilation, scarcity of vegetables, and unhealthy labour, involving exposure in malarious jungles. In 15 of the Burma jails more or less overcrowding is noted. At Toungoo, where the death-rate reached the maximum of 109·51, the water-supply is reported to be "doubtful." In two of the Assam jails there was some overcrowding. Eighteen of the jails in Bengal are noted in which the mortality was in excess of the provincial ratio, ranging from 31 to 123 per 1,000. Overcrowding is an evil which frequently occurred in the Bengal jails during 1891. We observe that it is reported in 27 of them to a greater or less extent. In many cases more information is desirable. For example, it is said in regard to one jail, and the formula is not unusual, "sickness and mortality due to a malarial disease, "diseases of digestive organs and cholera"; but, from a sanitary point of view, what is desired, is a full account of the local causes which produced these diseases. Imperfect drainage is mentioned in several jails as a cause of disease, and it is to be inferred, though more definite data on this point are frequently wanting, that the water-supply was not above suspicion. In Purneah, where, among a small body of prisoners the death-rate was highest, the results are set down to "climatic causes," which, though they are no doubt potent, do not fall within the province of practical sanitary work. In 22 of the jails of the North-west overcrowding is noted, but it was generally only temporary and partial. In some, defective drainage and indifferent water are also noted as causes of disease. In the Punjab jails the statistics of 14 are given separately, in which the mortality varied between 33 and 55 per 1,000. In 12 jails of the province, overcrowding existed in greater or less degree. Among other causes of sickness are mentioned impure water, bad drainage, defective ventilation, and filthy surroundings. In 10 of the Bombay jails there was some overcrowding. In Berar, also, three of the six jails note this defect, and it was also common in the Central Provinces and in Madras. In Berar, as already noted, the health of the prisoners was good, notwithstanding any overcrowding that occurred; but it is none the less true that overcrowding is a great evil that ought to be prevented, and that among no class of persons have the deleterious effects on health which arise from it been more marked than among prisoners.

18. *Further Researches on Cholera.*—The further researches which have been made on cholera are of much interest, and the conclusions which have been arrived at are of great practical importance. They do not by any means tend to establish Koch's bacillus as the cause of the disease. On the contrary, it appears that "there is more and more evidence to show that the prevalence of comma "bacilli in choleraic media is a consequence and not a cause of abnormal conditions in the host."

19. *General Conclusions on all the Indian Sanitary Reports for* 1891.—Sections V., VI., VII., and IX. of the Report are devoted to the general population, to an examination successively of the vital

statistics, of the history of the chief diseases, to the progress made by vaccination, and to civil sanitary works. All these important matters we have already fully discussed in our separate memoranda on the Provincial Sanitary Reports. In these memoranda there has necessarily been much repetition. In all of them the same subjects have to be dealt with—in all of them there are much the same questions to be answered, the same difficulties to be encountered, the same problems to be solved if possible. Our aim has been to treat them all from a purely practical point of view. We are satisfied from the year's records that sanitation is really making progress in India, and that it is in the main advancing on a sound basis. Here and there too much importance seems to be attached to purely theoretical considerations; but, as a whole, the authorities are alive to the great fact that the only sure basis of successful sanitary administration is the improvement of local conditions, especially as respects drainage, water-supply, conservancy, and the other great requisites of health. We are glad to observe that some of the suggestions we have made in previous memoranda for rendering the reports more complete and for directing them more clearly towards this great practical object have been accepted, and have already to some extent been acted on. Where they have not yet been acted on, we have repeated them in noting on the report concerned. A few of the more important of these suggestions may be here recapitulated.

(1.) The necessity for the constant inspection of the registers of births and deaths and comparing them with the data obtained on the spot.

(2.) The desirability of illustrating the results so obtained by detailing in every annual report the facts elicited at a few of such inspections.

(3.) The importance of making the registration circle in every case the unit regarding which all information should be collected, so that in each of them the birth and death rate may be considered side by side with the local sanitary conditions.

(4.) The importance of collecting data as regards the extent of vaccination over a series of years in conjunction with the statistics of small-pox over the same period, and in the same locality, so that the evidence respecting the influence of vaccination in checking small-pox may be fully examined.

(5.) In connexion with vaccination there is another point which deserves attention, and that is the very varying proportion between the number of primary vaccinations and re-vaccinations in different provinces. This is to be seen very strikingly in the general Statement No. II. appended to Section VII. of the Report of the Sanitary Commissioner with the Government of India. In Bengal, for example, out of a grand total of 1,537,648, vaccinations performed during 1891–92, 10,334 were re-vaccinations. In the Punjab, out of a grand total of 611,576, no less than 190,093 were re-vaccinations. Until the annual births have been fully overtaken by the vaccinators, which has not yet been by any means accomplished in a single province, it would be well that the energies of the Vaccination Department should be devoted, as far as possible, to primary operations.

(6.) In reviewing the Reports for 1891 we have had occasion to revert to what we have said in previous memoranda on the great importance of investigating carefully and of describing fully the conditions of localities, and especially of those localities in which disease is prevalent. Such work should form the basis of all true sanitary progress, for in order to remove or remedy causes of disease, the first step must be to ascertain if possible what these causes are. From this point of view the practical importance of the sanitary sheets of Native troops and jails, and of the Cantonment Sanitary Reports, does not seem to be so fully realized as it ought to be. The discovery of disease causes is often a matter of no small difficulty requiring careful and patient search, and the difficulty is increased by the fact that over great part of India there is as yet no special machinery for the purpose. In every cantonment and civil station, however, there already exists a staff of officers whose function it is to deal with the question, and it is very desirable, especially when there has been more than ordinary sickness and mortality, that more definite and earnest endeavours should be made to discover the cause. It seems to us that the investigation into the causes and conditions under which any given outbreak of disease has occurred requires to be thoroughly and systematically undertaken at the time when all the facts are fresh in the minds of local observers. Such investigations cannot generally be successfully prosecuted by those on the spot, who are already fully occupied in the treatment of the disease itself, but should be undertaken by some independent body of inquirers numbering among them some one with the requisite technical knowledge of sanitary engineering in its practical application to public health. As regards similar procedure directed towards the general population, the Presidency towns are already provided with health officers. In most of the larger towns throughout the provinces, the civil surgeon of the district is a member of the municipal committee, and has ample opportunity of urging reforms, and of pointing out the evils which must continue so long as these reforms are not carried out. We are well aware that this work is being done in many places. What we desire to urge is that the reports should contain full information—first, as to the local causes of disease which exist in each locality, and secondly, as to the measures which are being taken to remove them, and this information should be repeated year after year so that the evils themselves, and the necessity of reform, may never be lost sight of. The villages present the most difficult problem, and we shall watch with much interest the working of the various schemes of sanitation which have been devised for them, more especially that which has been inaugurated in the Central Provinces, because it seems to deal with the question more systematically than any of the others.

(7.) There is only one other point on which we would touch, and that is the necessity for having a properly educated sanitary engineering staff. The institution of the Sanitary Board in each province has been a most important step, and one which has already been shown to be productive of much good. But it should be recognised that sanitary work requires special knowledge and that to appoint any one as sanitary engineer who has not had experience in sanitary work is to appoint one who must acquire his sanitary experience at the expense of the towns and villages. In acquiring this experience it is certain that he will make mistakes, and will incur much wasteful expenditure. We would, therefore, suggest that at least a certain proportion of the engineering staff provided for India should be specially trained and instructed in all sanitary work.

21st July 1893.

No. 2.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Bengal for 1891.

Census for 1891.—This report could not be completed for several months after the usual time for submission owing to the want of the census figures, and the numerous calculations which were required to be made on them entailed further delay. These figures form the basis of the statistical tables of births and deaths for 1891. The total population of the province according to the new census is returned as 70,368,267, compared with 65,859,534 in 1881, so that during the ten years there had been an increase of 4,508,733. As the registration of births during these ten years has been confined to municipal towns, it is not possible, as it is in most of the other provinces, to test the results of registration during that period by the results obtained at the census. In Bengal such a calculation might, however, be made for the municipal towns, and this we suggested in our memorandum on the Report for 1890. It is very desirable to place the facts frequently and forcibly before the municipalities, and the census figures afford an excellent opportunity of doing this. On this point nothing could well be more striking and instructive than the remark made by the Sanitary Commissioner that "while the Census of 1891 shows the population of towns to have increased "during the last ten years by 92 per 1,000 the municipal birth statistics of 1891 would prove it to "be decreasing at the rate of 6 per 1,000 in one year."

2. *Registration of Births.*—In the municipal towns, with a population according to the new census of 2,716,424, the births registered equalled 21·46 per 1,000. In 1890, the ratio taken in the same population was 19·71, so that there has been some improvement. There is, however, good reason to believe that both these rates fall far short of the actual truth, and the details for the 141 separate towns which appear in Form I. supply ample evidence of the imperfection of the figures similar to those which we cited last year from the Report of 1890. The birth-rate varies from 2·95 to 44·57, and the number of male births to every 100 female births from 40 to 165. In only 34 out of the 141 municipal towns did the births recorded outnumber the deaths. In many of them the excess of deaths is very large. This remarkable result, though in great measure ascribed to neglected registration, appears also to be due in some places at least to disproportion of the sexes; for whereas the male population of the towns during the ten years increased by 169,991, the female population increased by only 60,585. It would be interesting and important also in its bearing on the statistics of individual towns to know how far these results are general, or if not, what places were specially affected by them. It would seem from the statement contained in paragraph 5 that prosecutions for neglecting to give information regarding births have in many places been frequent, but there is no relation observable between the *primâ facie* accuracy of the rate and the number of such prosecutions. In many places, with comparatively high birth-rates, they have been few or altogther absent, while the same state of things accompanies ratios which are manifestly most incorrect and give unmistakable evidence of neglect. Two important steps have been taken with regard to birth registration in Bengal. The work of recording births has been transferred from the municipalities to the police, and birth registration, which for many years had been confined to municipal towns, has been made general over the province. These changes were to take effect from the beginning of 1892. It is to be hoped that they will both be attended with success. So far Bengal has been most backward in the matter of registration, and especially of the registration of births. If we take the results of 1891, we find that the following birth-rates have been returned by the other provinces of India:—Madras 42, Bombay 36, North-west Provinces 33, Punjab 34, Central Provinces 43, Hyderabad Assigned Districts 42, Assam 28. In all of these the registration is general; in Bengal, where it was confined to 141 municipal towns, the rate recorded was only 21.

3. *Registration of Deaths.*—Over the province generally the year was very unhealthy, and the recorded deaths reached the ratio of 26·94 per 1,000, compared with 22·94 in the year previous The record bears every evidence of being far below the truth, and the Sanitary Commissioner, who is of this opinion, states that, as the mortality cannot be under 34 per 1,000 instead of 26, nearly 500,000 deaths must have been left unregistered. The generally unhealthy character of the year is shown by the fact that in 36 out of the 45 districts the death-rate was higher than in 1890, and in many of them much higher. In Nadia, for example, it was 45, compared with 20, or more than double; in Jalpaiguri 41, compared with 28; and so on in diminishing contrast, as may be seen in

the statement given at page 4. From this same statement, also, it appears that in 115 out of 144 towns the mortality was in excess, and in some of them considerably in excess, of the rate for 1890. In Malda, for instance, it was 93, compared with 35; in Chatra 61, compared with 36. The excessive death-rate was thus manifested both in town and rural circles. In both it was recorded mainly under the heads of cholera and fevers. It is only in respect of cholera that the mortality is given according to registration circles. This is done in a large map, which is entered at page xlii. of the Appendix. It is unwieldy, and difficult to refer to, and we would suggest that in its place a statement should be given, either in diagramatic form, such has been long in use in Bombay and lately adopted by Madras, or in any other form which may be found most convenient, to arrange all the registration circles according to the total mortality in each of them. Such a comparison not only supplies a useful check on the registration, but also directs attention to abnormal rates which call for local inquiry, both as to their accuracy and the conditions to which they seem to be due. A similar statement for births would also be most useful.

4. *Causes of high Death-rate.*—The causes of excessive sickness and mortality may be divided into general and local. Among the general causes attention is drawn to the abnormal meteorology of the year, as manifested in the marked deficiency of rain. For the province as a whole this deficiency amounted to 15·80 inches, and, if the districts be taken separately, it will be found that of the total of 45 only eight show an increase over the amount that fell in the year previous. In most of these eight districts the increase was trifling, but in Singhbhum it was large, and equalled 17·16 inches. In all the other districts there was a decrease in the annual rainfall, and in many of them this decrease was very marked. In 14 of them it equalled or exceeded 20 inches, and in two it showed a maximum deficit of over 80 inches. That the abnormal character of the year in respect of rainfall was connected with its unhealthiness may be accepted as a fact, because, if it acted in no other way, it must, to a large extent, have rendered the water-supply deficient, and more impure than usual; but the statistics of mortality and rainfall for 1890 and 1891 do not seem to establish any definite relation between the two. In some, with an increase in the rainfall, there was also an increase in the mortality; in others, a very large deficit in the rainfall is attended with but a trifling increase of deaths; while in others, again, a great increase of deaths accompanies a trifling deficiency of rain. The statistics of deaths in Bengal are, however, as yet so imperfect that no decided conclusions can be drawn from the figures. As regards the food of the people, it is said that "the outturn of crops "was below the average in 36 out of the 44 districts, in which the price of food grains was conse- "quently higher than the average." Among the general causes of the increased mortality of 1891, the Sanitary Commissioner places the Ardhodoya Jog fair, which took place early in February. Indeed, he seems to consider this as the most powerful factor at work in producing sickness, and more especially cholera, which was very prevalent, and was, he believes, in great measure due to its dissemination by the pilgrims. That pilgrims are themselves especially prone to cholera is a fact which has been illustrated on many occasions, and it would be strange if they were not, considering they are under the very conditions most favourable to disease. These conditions are fully described by the Sanitary Commissioner, who speaks of the pilgrims as having "suffered many privations and "hardships, and arrived at their destination in an exhausted condition, to suffer more privation and "hardships among the enormous crowds of people assembled" at the fair. How many of these fairs were held does not appear. They are spoken of as having taken place "at the several bathing- "places on the Ganges and its tributaries." Some further accouut of these bathing-places and of the probable number of bathers at each would have been of interest. There can, however, be no doubt that, in the aggregate, the number was very large, and the fact that such a vast multitude of people were exposed to unhealthy influences, especially in a year which from other, and perhaps still unknown, causes was itself very unhealthy, no doubt added much to the sickness and mortality. Whether the pilgrims were the means of causing an epidemic of cholera in any part of Bengal during 1891 we shall discuss in the next paragraph. As to the local causes of unhealthiness, the scant rain- fall, as already mentioned, would diminish and also cause deterioration of the water-supply in towns and villages, but on this important question of local conditions it is desirable that more complete information should be given in every annual report, towns being described individually and villages by groups. The only data of this kind which are given for 1891 are to be found in Appendix V., which contains the "Sanitary Estimate" of a few places which, apparently, had not been entered in previous reports. We are not losing sight of the inspection notes made by the Sanitary Commis- sioner on visiting a number of places during the year, but we think it important that, as far as possible, the local conditions of towns and village circles should be described shortly side by side with their birth and death rates year by year.

5. *History of the Chief Diseases: Cholera.*—The year was one of great cholera severity. Throughout the province 229,575 deaths were attributed to it, or the equivalent of 3·26 per 1,000. Every district suffered more or less, and every month returned many victims to the disease. During 18 years the province had only once suffered from cholera so severely, and this was in 1876. In 1891 the fair early in February was held as specially sacred, the number of pilgrims was unusually large, and to this, as already stated, the spread of the disease has been ascribed. But when we come to examine the evidence on which this opinion is based, we find little to warrant it. Facts are wanting to substantiate the conclusions advanced. For example, the civil surgeon of Jalpaiguri, which district suffered more than any other in Bengal, except Purnea, says, "cholera was introduced into the "district by pilgrims returning from the *Ardhodoya Jog* festival; it spread rapidly and took on a "virulently epidemic form," but no dates or other details are cited. In this district no cholera deaths were recorded in January, but in every other district where the epidemic is ascribed to importation by pilgrims in February, the disease had already shown itself unmistakeably in January.

There was no need of importation, because it was there already. In some districts the January deaths from cholera were few, but in others they were very numerous, especially in the Dacca Division and parts of the Presidency and Chittagong Divisions. In the district of Pubna, where the disease is ascribed to the fair in February, the number of deaths from cholera in that month was very much less than it had been in January, only 122, compared with 472, and it is worthy of notice also that in the province as a whole the total deaths from cholera recorded in this month of February, in the early days of which the fair was held, were somewhat less than the total of January. The matter is of importance solely in its practical aspect. It is far from desirable to lead the people to believe that by stopping fairs, and by shunning pilgrims or others, they will protect themselves from cholera; though it is important, especially in unhealthy seasons, to discourage fairs as far as possible, and so diminish the number of persons exposed to unusual fatigue and privation. The proper remedy is to regulate the sanitary conditions at the places where the fairs are held, and to protect towns and villages alike, by improvements in water-supply, drainage, and all other sanitary requisites. We note that a set of rules for the better sanitary regulation of fairs was being considered by the Government of Bengal.

6. *Small-pox and Vaccination.*—Not only was cholera prevalent during 1891, small-pox and other diseases also more than ordinarily swelled the mortality of the year. The deaths from small-pox numbered 16,193, more than they had been in any year since 1884, when they amounted to 18,533. Of the 16,193 deaths recorded, 10,065 were those of children under 12 years of age. The district of Cuttack suffered most, the small-pox mortality there having equalled 1·70 per 1,000. Among towns the mortality reached the maximum of 8·95 in Midnapore; in the rural area of Maslandapur in the same district the rate was even higher (9·42). These unsatisfactory results are attributed, and no doubt they are in great measure due, to shortcomings in the vaccination department. This department has now been reorganised, the chief feature in this reorganisation being, that in future each civil surgeon will be responsible for vaccination throughout his district. Steps have also been taken to secure an abundant supply of good lymph. This is now turned out in large quantities from the Animal Vaccination Depôt in Calcutta, and is reported to be of good quality. Of all the important matters to be attended to in vaccination, this is the most important of all. We observe, in connexion with the statistics of Chittagong, that the lymph which had been previously supplied there had been bad, and did not afford the promised protection from small-pox—a result much to be regretted, not only in itself, but also because it does much to retard the acceptance of vaccination by the people. The general management and supervision of vaccination over such a large and populous province as Bengal is a vast undertaking requiring constant care and watchful attendance to many details, and it is therefore well that the department should be more decentralized than it has been hitherto, and that the civil surgeons should be required, as they are under the new organisation, to aid more largely and directly in this important work. So far the results achieved by vaccination in Bengal have been disappointing, and this is fully acknowledged. The Sanitary Commissioner remarks: "In the Bihar circle, the districts which are supposed to have "been protected by Government agency return a higher rate of mortality than those in which "vaccination has not yet or only partially been introduced. There is only one explanation of this "unsatisfactory result, and that is, that the work of vaccination in the so-called protected districts "was not thorough." During the year 1891–92 for which the separate report is furnished, there was a considerable reduction in the number of vaccinations performed which is ascribed to the unhealthiness of the year, and other causes. In connexion with the outturn of the department, the two most important practical questions are—how far is the infant population, which is being added year by year, protected by successful vaccination, and what relation does the mortality from small-pox in each district bear to the successful vaccination which had been recorded in it? In answer to the first question, there is no doubt that a vast amount remains to be done. Births for many years have been registered only in the towns, but the statement which the Sanitary Commissioner enters in paragraph 12 of the Vaccination Report estimates the total births of the province at 40 per 1,000. This gives a total of 2,813,926, and assuming that of these 339,744 die before they complete their first year, there remain 2,474,152 infants available for vaccination every year. The actual number successfully vaccinated in 1891–92 was only 292,438. As regards the second question, two diagrams are given, one to show the death-rate from small-pox in each district during the year and the other the proportion of population protected by vaccination during the seven years 1885–92. The two sets of lines present considerable fluctuations. The Lieutenant-Governor in his orders on the report remarks that "the figures show on the whole that increased "protection does carry with it, as a general rule, an appreciable reduction in the death-rate. This "result will tend to be more conspicuous as time goes on, and a larger proportion of the population "comes to be protected." The contrast in their relation to small-pox between well-vaccinated communities, and those which have been most imperfectly protected, should be most striking, and the municipalities naturally supply localities where such contrast might be most prominently illustrated. The results in municipalities should be more favourable than those in rural areas. But so far this has not been achieved. In 1891, out of an estimated addition to the population of municipal towns of 96,578 infants, only 18,122 were successfully vaccinated. In the municipalities, moreover, the mortality from small-pox recorded in the registers (·48) was more than double that of the rural areas (·22). The diagrams to which we have referred are of great importance, because they forcibly bring vaccination to the only real test which can be applied to it, and that is the amount of protection it affords the people against small-pox; but we would suggest that the facts would be still more clearly illustrated if they were brought into one diagram, the lines for small-pox and vaccination for each district running immediately side by side.

7. *Fevers and other Causes of Deaths.*—The year was remarkable not only for the heavy loss of life due to cholera and small-pox, but also for the great mortality ascribed to fevers. In 1890, also, fevers had been unusually prevalent, and added more largely to the deaths than any previous year on record. This result was ascribed in the main to the excessive rainfall. In 1891 the fall was most deficient, but the fever mortality instead of diminishing was even higher than it had been in 1890. It is said: "Last year the high rate of fever mortality was attributed to excessive "rainfall. This year, paradoxical as it may seem, the still higher death-rate must be attributed "principally to deficient rainfall." The reasons assigned for this conclusion are not convincing, and it would rather seem as if over and above the meteorological condition of excessive or deficient rain there was some other unknown factor at work determining the results. Indirectly the deficient rainfall must have acted prejudicially in deteriorating the water-supply, and as the Sanitary Commissioner observes, "the impoverished condition of the people also, owing to the failure of crops "and high prices of food, in other words, a lower standard of living, had much to do with the febrile "unhealthiness of the year under report." Not only were prices dear, but the cultivators, owing to the want of water, were more than ordinarily exposed to fatigue in endeavouring to irrigate their lands. These are all points in regard to which more details would have been of interest, but we have failed to discover in the statistics adduced any direct relation between the extent of the fever mortality and the deficiency of rain. In the district of Malda, for example, the increase of fever mortality over 1890 was 16·90 per 1,000, and the deficiency of rainfall 26·42 inches. In Nadia, with a fever mortality not much under that of Malda, the deficiency of rain was only 6·01 inches. In the district of Pubna this deficiency was 13·37 inches, or more than double that of Nadia; but the fever mortality, instead of showing any increase with this deficiency, was somewhat less than it had been in the year previous. The other great heads under which mortality is recorded do not call for special comment. Dysentery and diarrhœa and injuries each contributed much the same number of deaths as in the year previous, but under the designation of other causes there was a considerable increase.

8. *Sanitary Works.*—The Sanitary Commissioner believes that the dysentery and diarrhœa peculiar to the hills are due to a particular micro-organism, but whether this view be accepted as correct or not, or whether we agree with him in ascribing excessive fever mortality in one year to heavy rainfall and in the next year to deficiency of rain, there can be no question as to the practical side of sanitary work, and that the best, and in fact the only real antidote to these and other diseases, is to be found in sanitary improvements. It is, therefore, all important to know what is being done in this direction. Section 9 of the report shows that Rs. 13,37,569 were expended by municipalities on conservancy and other sanitary purposes, but out of this should be deducted the considerable item of Rs. 2,41,032 for treatment of the sick. No great work of improvement seems to have been carried out during the year, but Appendix III. contains a list of minor improvements executed not only in towns but also in rural areas. Some of these were made at the cost of private individuals whose names are given. Among the more important items in the municipal list are drainage works at Serampore, acquisition of land for general improvements in the 24-Pergunnahs, extension of water works at Dacca, and preparatory drainage works at Patna. It is gratifying to learn from the orders of the Local Government that several large schemes were under consideration, and that the new Municipal Bill was expected to give a great stimulus to progress in this respect. We are glad, further, to notice that with few exceptions there is a growing desire on the part of the Municipal Commissioners to do all that can be done "for the benefit of the towns committed to their "care, to give effect to simple and inexpensive advice, and, as far as their limited means will allow, "also to the larger principles of modern sanitary science." Of this some interesting particulars are furnished in separate inspection reports on a number of places which the Sanitary Commissioner has appended.

9. *The Sanitary Board.*—During the year five formal meetings of the Sanitary Board were held, at which many most important schemes of improvement were discussed. Among these may be mentioned the water-supply for Howrah and other municipalities on the right bank of the Hooghly, for Purulia and other places, also for the drainage of Puri, Faridpur, Jessore, and other localities. In addition to these formal meetings the Sanitary Engineer visited many municipalities, and advised them on the practical measures to be taken for improvement. The Government has materially simplified preliminary surveys by purchasing instruments which are hired to municipalities as they are required, and by which means they are saved needless expense. This arrangement might be followed in other provinces.

27th June 1893.

No. 3.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of the North-Western Provinces and Oudh for 1891.

1. *Progress of Registration and means of Improvement.*—In considering the vital statistics which form a large part of this and of all the Provincial Sanitary Reports of India, two great practical questions claim attention. First, how far has accuracy yet been attained in the collection of these statistics; and, secondly, what steps can be taken to ensure greater accuracy in them? The Sanitary

Commissioner believes that "the general registration of births and deaths in the united provinces is "undoubtedly effected with considerable accuracy," but that the causes to which deaths are attributed are not to be trusted. This defect was fully to be expected, and was indeed anticipated when the system was first inaugurated. The prime object to be secured was the registration of the birth or death, and until a vast change comes over the country little more can be looked for. The main endeavour should, therefore, be directed to this prime object. No doubt, as the Sanitary Commissioner observes, considerable accuracy has been attained, a wonderful degree of accuracy, in fact, considering the rude machinery employed; but there is evidence in the returns, and more particularly in the extremes of the birth-rates in different places, that much still remains to be done in securing a more complete recording of both births and deaths; and we believe that more will be gained by attempts to improve the simple notice of these facts than by endeavouring to secure a more accurate entry of the cause of death, which, under present circumstances, cannot be had. The first step towards greater accuracy in general registration is to examine the returns in detail—by registration circles, the unit on which all is based. This is already done by the Sanitary Commissioner as regards deaths in the tabular statement which covers pages 23 to 30. In that statement the death-rates from small-pox, fevers, dysentery and diarrhœa, and all causes, are entered for every circle of registration in the province, and the materials of which the district averages are composed can there be examined in detail. We would suggest that the mortality from cholera should also be shown separately in this statement, and that a column should be added to contain the birth-rate. The statement would then be complete, and would afford a ready means by which attention can be at once directed to the spot where inquiry is needed, first as to accuracy of the returns, and then, in the event of no sufficient reason appearing to doubt their accuracy, to further inquiry as to the local causes of the unusual figures. It is to the importance of these local inquiries that we would draw attention, and to the desirability of their occupying a more prominent place in annual reports, both because they are of interest and also because this more prominent notice is calculated to lead to practical action. The Deputy Sanitary Commissioner of the first circle in his report remarks, in regard to the condition of the registration, that births were often found to have been omitted in villages, and that the towns also showed too low a rate. The Deputy Sanitary Commissioner of the second circle says that "deaths, as a rule, are very fairly accurately rendered, but a certain number of births, especially "those of female children, are omitted." In the third circle, the Deputy Sanitary Commissioner is of opinion that "registration is still very imperfect, and the cause of death frequently inaccurate." A few illustrations of the actual figures gathered from the registers, on the inspection of one or two towns and villages, as compared with the data obtained by questioning the people on the spot, would give a better idea of the actual state of registration than any other means that could be adopted.

2. *The Census of* 1891.—Although the statistics are all calculated on the Census of 1891, full details of this census were not available when this report was written, and various questions which the Census figures suggest are therefore left to be discussed in the Sanitary Report for 1892. In our memorandum on the Report for 1890, we drew attention to the general confirmation of the registration returns derived from the fact that the net result of the 10 years of registration on the Census of 1881 showed only a slight variation from the population returned by the Census of 1891. From the more accurate figures now supplied, it appears that the difference between the two is only 95,608, an altogether inappreciable difference in dealing with nearly 47 millions of people. At the same time, it is to be noted that this general result contains a number of districts in which the deduced population falls considerably short of the Census population, and others in which the reverse is found, though not to the same extent. The Sanitary Commissioner in his remarks dwells on the errors that arise from taking the Census figures for 10 years as the basis of calculating either births or deaths, which increases gradually as the new Census approaches, and he proposes to obviate these errors by supplementary statements, such as he has given in this report, in which the population each year is corrected by adding to that of the previous year all the births of that year and deducting all the deaths, by following, in fact, the same method for each year which we have already mentioned as having been taken with the ten-year period from 1881 to 1891. The plan has much to commend it, if the supplementary statistics are confined to separate tables in the body of the report and do not interfere with the standard statements in the appendix. With this proviso it might be adopted in all the reports.

3. *Births.*—The birth registration seems to fail in the omission of many female births. Over the province as a whole, in 1891, the male registered births preponderated in the proportion of 110 to 100 over the female births. Every district shows some such preponderance which, in the Meerut district, reached the maximum of 117 male to every 100 female births. The records of previous years in the North-Western Provinces and Oudh yield similar results, and the same remark applies more or less to the other provinces. In Madras the proportion was lowest, only 103 male to every 100 female births; in the others it ranges from 106 in the Central Provinces to 114 in the Punjab, in some parts of which it is looked upon almost in the light of a disgrace to record the birth of a girl. The extreme variations in the district rates of the North-Western Provinces and Oudh during 1891 merely repeat the experience of former years, and of other parts of India, and show that registration is still imperfect. The Sanitary Commissioner ascribes the low brth-rate of the year to "the excessive mortality in the spring and autumn months of the previous year;" and this, along with the increased sickness which such mortality indicates, must undoubtedly have had a marked effect in diminishing the number of births. We have not, however, been able to connect the low birth-rates of certain districts in 1891 with high death-rates in those districts during 1890, or to find evidence in the statistics of these two years of the reverse conditions. It is disappointing to find that in many, even of the larger municipalities, the registration of births is so much neglected. Of this, Benares,

with a birth-rate of only 22·50, is an extreme example; but we note that of 101 municipalities 20 recorded a birth-rate under 30, while in 28 it was over 40 per 1,000. In 20 districts out of the total of 49 in the province the deaths recorded were in excess of the births, the proportion varying from ·34 to 13·78 per 1,000. In several of the municipalities the excess death-rate was greater even than this, while in a few, to which special attention is drawn in the orders of the Government on this Report, this excess varied from 17 to no less than 51 per 1,000.

4. *Deaths.*—Although the year was one of epidemic cholera, the general health of the people in spite of this was better than usual, and much better than it had been in the year previous. Fevers were less prevalent, and the epidemic of influenza had practically disappeared. The death-rate for 1891, which stands at 31·14, is less than that of six out of the ten preceding years, even when the ratios of these ten years have been amended by calculating the deaths on the annually increased population obtained on the system of "natural increase" adopted by the Sanitary Commissioner. As was to be anticipated, especially in a year of epidemic cholera, the death-rate varied greatly. In districts it ranged between 20 in Dehra Dun, and 47 in Sultanpur, and in the larger municipalities between 23 and 52. In the smaller municipalities the range was wider even than this. In the statement already referred to as showing the death-rates from small-pox, fevers, dysentery, and diarrhœa, and all causes in each registration circle arranged by districts, the variations even within the same district are very remarkable. We may instance a few examples. In the district of Kumaun, the minimum was 15 and the maximum 54; in Shahjahanpur, the minimum was 15 and the maximum 70; in Muzaffaragar the range was from 22 to 105; in Muttra from 15 to 52; in Furakhabad from 18 to 182. Attention has already been drawn by the Local Government to some of the more remarkable figures in this statement. The Sanitary Commissioner has given a diagram to illustrate the monthly mortality of 1891, as compared with the decennial mean monthly ratio. We have frequently urged the obvious objections to such comparisons. A mean composed of great extremes is not a standard which can be employed with any useful result. More would be gained by delineating each year separately.

5. *History of the Chief Diseases: Cholera.*—In 1890 cholera had been prevalent and added materially to the mortality. The deaths in that year numbered 80,295. In 1891 the disease was more prevalent still. It added 3·60 per 1,000 to the mortality, and the number of deaths amounted to 169,013, a larger number than had ever been recorded before in any one year, with the single exception of 1887, when it reached the maximum of 200,628. The statistics of cholera for 22 years, which are tabulated in the report at page 13, are very instructive. They show how fluctuating the disease is in different years and different districts, how certain years are marked by a general character for prevalence or abeyance of the disease, while in other years, along with general abeyance over most of the province, certain places suffered more than in any other year. Of this the figures of 1870 afford a striking example, so striking, in fact, that we are inclined to doubt their accuracy. The cholera death-rate of the Gonda district in that year, 51·2, is more than double that recorded in any other district during the 22 years in question. In Gonda itself the next highest is only 8·25 in 1887. The provincial total for 1882 given in the statement (20·2) would also seem to be a misprint. The most striking features of the epidemic of 1891 are its widespread prevalence, its early manifestation in the year, and its long persistence, especially in the Eastern districts, where also it was most severe. The cholera map has not yet been prepared according to the revised form now generally adopted in the sanitary reports, and the areas of comparative prevalence and exemption are not clearly indicated The distribution of the disease within these areas, which cannot well be detailed in any map, comes out most clearly in the Annual Form (No. VII.) devoted to cholera, and there it will be seen that even in these districts which suffered most, such, for example, as Sultanpur and Partabgarh, a very large proportion of the villages escaped.

6. *Its relation to Sanitary Defects.*—From a practical point of view, the great thing to be done is to consider local prevalence in conjunction with local defects, and to ascertain how far these are capable of being remedied. In the diagram before page 17, certain towns in which the disease was prevalent are ranged in order according to their death-rates from cholera, and in Appendix F. an abstract is given of the sanitary reports on towns showing the death-rate and the conditions of the water-supply, drainage and conservancy. Unfortunately, this appendix includes only those municipal and Act XX. towns which had been inspected during the year, and many of those which appear in the cholera diagram are not to be found in it. Taking a few examples of places which are entered in both lists, we find Kairana, a town of 18,420 inhabitants, with a cholera death-rate of 32·14, with a water-supply which is described as "indifferent" and "polluted," "most indifferent drainage," and "bad conservancy." Banda, with 23,071 inhabitants, suffered from cholera to the extent of 13·87 deaths per 1,000. Here the water is reported to be "indifferent" and "liable to pollution," and the "drainage imperfect," and much the same is said of Fyzabad and Furrakhabad and other places that might be cited. There is no want of evidence of the relation of such defects to cholera prevalence. Cannot more decided and systematic efforts be made to remedy them?

7. *Cholera and the Hurdwar Fair.*—In connexion with the history of cholera in the North-Western Provinces during 1891, it is satisfactory to note that the great *Kumb* Fair at Hurdwar in that year passed off without any outbreak, either at the fair or after it. The event had been looked forward to with much apprehension, in consequence of the unfortunate experience of the two previous *Kumb* fairs occurring at 12 year intervals, one in 1867 and the other in 1879, and the history of cholera in other parts of the province during the early part of 1891 increased these apprehensions. The usual efforts were, therefore, made to keep everything connected with the fair in the most perfect sanitary state possible. No opportunity fortunately occurred for testing whether an epidemic of cholera can

be averted by the prompt isolation and disinfection of the first cases. The magistrate, in his report, certainly speaks of two cases of "undoubted cholera," having occurred during the most crowded period of the fair, but the Sanitary Commissioner enters no case of cholera in his returns. He enters only "three suspicious cases," and from the details given it seems clear that although it was very proper to regard them at the time as suspicious, they were really not cases of cholera at all. Every credit is due to all concerned for the excellent arrangements made at the fair; but in looking on the events from an epidemiological point of view, it must be borne in mind that Saharunpore, in which the Hurdwar fair is held, and the other neighbouring districts, Bijnore, Muzaffarnagar, Meerut, Dehra Dun, and Garhwal, all preserved almost complete immunity from cholera while the fair was being held as well as before it, although they must have been exposed to the invasion of many thousands of pilgrims from the eastern districts, in which cholera was very prevalent and had been prevalent for weeks.

8. *Small-pox and Vaccination.*—The history of another year in relation to small-pox is favourable. In 1891 the mortality fell to less than one-half of what it had been in 1890, and the records over 22 years go to prove that epidemic outbursts of the disease are less frequent than they used to be, and that when they do occur they are more localized. In 1891 only two districts return deaths from small-pox in excess of 2 per 1,000, and only three of the towns fall into this same class. The town of Barhaj returned the maximum mortality of 14·97 per 1,000. No mention is made of any local circumstances favouring this result, or of anything in the history of vaccination in that place to which it could be attributed. It is very desirable that when excessive mortality such as this does occur, local inquiry, if possible, should be made, both as to the facts and the causes to which it is to be assigned. Excepting in the eastern districts of Gorakhpur, Azamgarh, and Ghazipur, the registration circles show a remarkable immunity from small-pox. Many escaped altogether, and in very few did the mortality exceed 1 per 1,000. In those three districts, on the other hand, nearly every circle suffered, and many of them severely. In all of them the proportion of persons successfully vaccinated in 1891 was small as compared with many other districts. The returns of vaccination for the province as a whole in 1891–92, for which year the usual annual report has been prepared, show considerable progress. More than one million of persons were operated on, of whom 900,731 were operated on with success. There was a slight falling-off in the number of infants successfully vaccinated. This is attributed to the diminished number of births in 1891 as compared with 1890, to which reference has already been made; but the proportion of infants successfully vaccinated was only 24·26 per cent. of the total births. The registered births amounted to 1,559,888, whereas the successful vaccinations in infants amounted only to 378,512. Of the deaths recorded under the head of small-pox, more than a half were in children under 12 years of age. It is worthy of notice that, for the first time in the history of these provinces, vaccination was carried on throughout the year from the commencement without any supply of lymph from England. Animal lymph propagated at several depôts was found amply sufficient. In addition to the general supervision exercised by the Sanitary Commissioner, the vaccination branch of the Provincial Sanitary Department consisted of three Superintendents or Deputy Sanitary Commissioners, seven Deputy Superintendents, 50 Native Superintendents, and 770 vaccinators, besides 43 apprentices. It seems very desirable that this large subordinate staff should gradually be educated and trained so as to be fitted to take an intelligent part in general sanitary work, and not confine themselves to the one simple operation of vaccination.

9. *Sanitary Defects.*—In the history of fevers and of the other great causes of deaths indicated in the statistics, there is nothing which calls for special remark. Owing, apparently, in some measure, to the diminished prevalence of influenza, there was a reduced mortality under fevers. The autumn fevers were also less rife than they had been in 1890. Further particulars regarding influenza would have been of interest, but the above embodies the only reference made to this disease. It is not said where it was most severe or what was the time of its appearing and disappearing. The Sanitary Commissioner has given two diagrams, which illustrate in a very graphic way the great loss of life that goes on every year in Indian towns and villages as compared with what occurs in England, and the tabular statement which follows them supplies further particulars of high death-rates in many of the registration circles of the North-Western Provinces and Oudh. When we come to inquire into the local causes of these results we feel the want of more complete information. The only portion of the report which seems to deal with such causes is the abstract of sanitary reports of towns which forms Appendix F., but this appendix includes only the towns which had been inspected during the year. We have already made some extracts from this appendix in connection with cholera mortality. Many of these towns still manifest very glaring defects in water-supply or drainage or conservancy, or sometimes in all three, which it is most desirable should be remedied.

10. *Sanitary Works.*—The record of another year's work shows that much has been done in this direction, and that further improvements are in contemplation. Of major works the most important are the completion of the water-supply works for Allahabad and Almora, and the commencement of works for the same object at Benares, Cawnpore, and Naini Tal. The drainage of the country lying between the Burhganga and the East Kali Nadi, which had been water-logged, is another most important work, in which good progress had been made. The details for each district, which are given in Section IX., show that considerable sums were expended on minor improvements, such as the construction and repair of drains, the sinking and cleaning of wells, the erection of slaughter-houses and latrines, and the like. It is gratifying to learn from the concluding remarks of this section that "great sanitary improvement is being effected in most of the more important and in many of "the minor municipal towns," and that "the improvemements initiated and carried out during the "past few years have been very extensive." Where great sanitary measures have been inaugurated, such as the waterworks at Agra, Allahabad, and other places, it would be interesting to know

clearly, by comparison with former years, and also with other places not already provided with pure water, what change in the public health had been effected by such reforms. The relative prevalence and fatality under separate headings unfortunately cannot be given with any accuracy, but the total mortality from all causes affords an excellent basis for comparison. Such an inquiry as we now suggest would not only be of interest, but if it clearly showed, as we have no doubt it would, that great sanitary improvements had been attended with a decided diminution in the death-rate, the fact could hardly fail to serve as a powerful incentive to the introduction of similar reforms elsewhere.

11. *The Sanitary Board.*—In Appendix A. proceedings of three meetings of the Sanitary Board are entered, but although mention is made in them of several important matters having been discussed, it does not appear what definite conclusion was come to on them, or what action was taken in regard to them. In the orders of the Government on this sanitary report it is said that "an annual report, "containing a succinct account of its work during the year, should, in accordance with instructions "issued, have been submitted by the Board." Such a report would be a most useful annual record of what was being done. In the Village Sanitation Bill, as introduced into the Provincial Legislative Council, some changes have been made from the lines sketched in the previous report. As it now stands, it is intended to secure a better water-supply, not only to villages with a population of over 2,000, but also to towns under Act XX. Two other Bills have also been introduced in the interests of sanitation, one to regulate lodging-houses, and the other to provide for the construction and maintenance of sewerage works in municipalities. We would suggest that when the Acts on these and other sanitary matters have been passed, they should be appended in full to the annual sanitary report, which should be the repository year by year of all important information on subjects connected with the public health.

27th June 1893.

No. 4.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of the Punjab for 1891.

1. *Improvement in Health compared with* 1890.—The results of the year 1891 in the Punjab present a favourable contrast to those of the year previous. The year 1890 had been extremely unhealthy; fevers in particular had been most prevalent and fatal, especially in certain parts of the province, and the access of deaths over births showed a loss of 7·79 per 1,000 of population. In only 13 out of the 31 districts had the births equalled or exceeded the deaths. With an average mortality of 46·87, to which several of the districts contributed more than 50 per 1,000, and Sialkot in particular contributed no less than 102, 1890 was a year long to be remembered for its specially unhealthy character. In 1891 the results were much more satisfactory. The death-rate fell to 29·13. The excess of births over deaths yield an increase of population of 4·89 per 1,000, and increase is the general rule. In only eight districts did the deaths exceed the births, and this chiefly occurred in the frontier districts in which registration, and especially the registration of births, is very imperfect. The general increase would have been considerably more, but, as we shall see presently, the great unhealthiness of 1890 told very adversely on the birth-rate of 1891. The excessive mortality of 1890 was associated with heavy rainfall in the third quarter of the year; in 1891, on the contrary, the fall was less than usual in this quarter. The Sanitary Commissioners shows in detail that this was the case in 18 out of 22 districts compared; that in two of the others, where the monsoon is always light, the difference is very slight, while in the remaining two, which really form the only exception to the general rule of the year, the heavy rainfall was attended with a high mortality from fever. Food was slightly dearer than the average of the previous five years, but the rise was not such as to have an appreciable effect on the health of the people.

2. *Births.*—The births recorded during 1890 equalled 39·08 per 1,000. The ratio for 1891 is only 34·02, but, in comparing the two, it is to be borne in mind that the statistics of 1890 are based on the census of 1881, whereas those of 1891 are based on the census of 1891, which shows a large increase in the population. If the population of 1891 be taken as the standard of comparison, it appears that the annual birth-rate of the previous five years stands at 35·7, whereas the rate for 1891 is 34·02. The sanitary Commissioner ascribes the falling-off, and no doubt with much reason, to the great sickness of 1890. The details which he has furnished bear out the deduction, for the most marked diminution in the number of births is found just nine months after the great autumn sickness of 1890. After that there is a decided rise. The general results for the province as a whole are still vitiated to a considerable extent by the continued imperfections in the frontier districts, where it is hoped that, in consequence of repeated orders, some improvement had been effected, but where much still remains to be done. Even leaving them out of account, there is considerable variation in the results, from 28 to 39 per 1,000, and no doubt still more marked variations would be observed if the records of each registration circle were available. It is very desirable that the minimum and maximum rate in these circles should be given district by district. It is only by examining the details of which the average is composed that a just estimate can be formed of the value to be attached to the general result, while the occurrence of marked extremes show at once where local inquiries should be made. The high proportion of male to female births—114 to 100—is in itself suspicious of imperfection in the registration, and the suspicion is increased

by finding that this high ratio is caused in the main, though by no means entirely, by an excessive ratio of male births in the frontier districts.

3. *Deaths.*—The district mortality varied between 20 in Hazara and 41 in Delhi. For the province it stood at 29·13, which is calculated to be nearly 2 per 1,000 less than the average of the previous five years, but individual years differ so much in India that it would be more instructive to compare with the maximum and minimum of five years, or of any other period, than with the average. The Sanitary Commissioner notes that in the district of Dera Ghazi Khan abnormal mortality was due in part to what appears to have been an outbreak of relapsing fever. In Dera Ismael Khan it would seem that typhus fever was common in May, while influenza prevailed severely in November and December. In Peshawur also, during the cold months, typhus fever was reported to be more than ordinarily common, and in the autumn months cholera was epidemic. Such were the causes of heavy death-rates in these districts. Of the general course of the mortality of the year as distinguished from that of ordinary years, attention is drawn to the fact that the death-rate of January and February was abnormally high, a legacy from the great sickness of the preceding autumn. Unusual mortality in July was due to influenza, which commenced in May and attained its maximum in July. The favourable returns of September, October, and November were to be accounted for by the remarkable abeyance of malarial fevers, while in December a higher death-rate than usual was ascribed to an outbreak of malarial fever in the eastern part of the province, and to influenza in some portions of the west. According to sex the death-rate showed practically no difference. Among both males and females it was 29 per 1,000. We remarked last year on the higher mortality recorded among females as a feature peculiar to the Punjab, but it would seem that the result was in great measure due to the calculations of late years having been made on the Census of 1881. When taken on the Census of 1891, the excess female mortality is reduced to 1·79 for 1890, 0·94 for 1889, and 0·59 for 1888. The death-rate among children in the Punjab, and especially among infants under one year, presents a remarkable contrast to the records of the other two provinces whose reports for 1890 we have already considered. The results stand thus :—

Ratio of Deaths per 1,000 of Population.

	Under 1 Year.		1 to 5 Years.	
	Male.	Female.	Male.	Female.
Hyderabad Assigned Districts - -	323	280	116	100
Central Provinces - - - -	397	340	43	36
Punjab - - - - - -	160	152	44	45

We fear that little dependence can be placed on any of these figures, but it is well to draw attention to the great disparities they show. Unlike these other provinces also the Punjab returns a much lower death-rate in the rural circles than in the towns—28 compared with 35 per 1,000. The Sanitary Commissioner believes that this is to be explained by the better sanitary conditions under which the people in the villages live. In every respect, he thinks they are better situated as regards health, except in the matter of water supply, which is better protected in the towns. Yet, notwithstanding the great advantage which a purer water affords, he is of opinion that this is more than compensated for by the other advantages which the dwellers in the villages enjoy. In forming a conclusion on this point, the experience of other provinces must be considered as well as that of the Punjab, and it will be seen from what has been already said that the results in the Punjab are at variance with those in Berar and the Central Provinces.

4. *Results of the Census.*—The statistics of 1891 are based on the census of that year, and advantage has been taken of this renumbering of the people to test how far the increase of population which it reveals accords with the increase arising during the ten years since 1881, when the previous census was held—how far the number of births registered was in excess of the number of deaths. According to the census the population of the province has increased by 2,018,649, whereas the increase, based on the excess of births over deaths, amounts to 1,480,458, or a deficiency of 538,191. The census gives an increase in every district except Delhi, where there is a small decrease. According to the registration there should have been a decrease in three districts, of which Delhi is one; if the frontier districts be excluded, for the registration in them has been long known to be imperfect, the deficiency in the registration statistics as compared with the census is reduced to 254,687. How far the results have been affected by immigration and emigration is another question, on which the Census Report may supply some information.

4. *Measures to Improve the Registration.*—The Sanitary Board of the province, we are informed, had the subject of the regstration of vital statistics before it at more than one of its meetings during the year, and in the beginning of 1892 submitted to the Government certain recommendations with a view to obtain more accurate results, both in municipalities and rural circles. What these measures were has not been stated. They will no doubt be explained when the orders of the Government have been issued and they have been definitely decided on. We see no mention of any inspection of the registers. In the matter of general sanitary inspection the Department was very active. From Section X. we learn that the Commissioner himself inspected many towns and villages, the Deputy Sanitary Commissioner inspected others, and a large number in addition was inspected by Civil

Surgeons and Assistant Surgeons. In testing the Vaccination Returns also an immense number of places were visited. The registration of both births and deaths would naturally form a subject of inquiry on all these occasions. More particulars of these inspections would be of interest, and the facts elicited in respect of the registration would be valuable. It is mentioned that when the birth or death rate of any circle as given in the weekly returns falls below the average the Deputy Commissioner of the district is requested to make inquiry and, in the event of there having been negligence, to enforce the necessity of greater care. Frequent inspection of the registers, and comparing the entries with the information to be gained on the spot would, we believe, prove useful, especially if this were done not only by the sanitary staff but by all officials on tour.

6. *History of Chief Diseases: Cholera.*—The principal facts regarding cholera during the year are that the disease was much more prevalent than it had been in 1890, the deaths having numbered 10,107 compared with 3.401, that the epidemic was still slight when contrasted with many others which have occurred in the Punjab, that it commenced about the same time of the year as it usually does, and disappeared about the time it had done before, that it was widely prevalent, having affected almost every district of the province, and yet that the individual places attacked were very few—of 37,579 towns and villages deaths from cholera were reported from only 1,039. The districts of Peshawur and Kohat suffered more severely than others, the death-rate from cholera in them having been respectively 4·82 and 3·57. In Ludhiana it was 1·54 and in Lahore 1·47. In none of the other districts did it amount to 1 per 1,000. There is thus abundant evidence of a widely diffused, and yet comparatively mild, epidemic. From the narrative recorded regarding the first cases in the district of Hissar, the outbreak there would appear to be ascribed to travellers returning from Hurdwar. There is, however, no evidence connecting them with the few other attacks which subsequently occurred. But, whatever be the truth on this and other controverted points in regard to cholera, there can be no difference of opinion as to the action required. Quarantine is an impossibility, the isolation and disinfection of cholera sick in Indian villages is equally impossible; and even if such measures were possible, the experience of those communities in which they have been attempted has not been by any means encouraging. Every energy ought therefore to be devoted to carry out sanitary improvements as the only efficient means of preventing the disease. The Sanitary Commissioner has furnished an interesting statement comparing the mortality from cholera in the villages and towns of the province in 1891, and the result he adduces is, that while this mortality in the villages equalled 6·73 per 1,000, in the towns it equalled only 1·82. Similar contrasts are supplied by the statistics of 1890 and 1889. He believes that the excessive cholera mortality in villages may be connected with the greater liability of their water supply to pollution. However this may be, there can be no question that the improvement of the water supply of villages is one of the most pressing reforms called for in the provinces of India, a conclusion which is fully recognised in the orders of the Local Government on this Report.

7. *Smallpox and Vaccination.*—The history of the province as regards smallpox continued to be very favourable. Deaths from this disease were never so few in the Punjab during any year as they were in 1891. They numbered only 3,426, whereas the smallest number ever recorded previously was 6,379 in 1882. The facts bear strong testimony to the excellent work of the vaccination branch. The highest death-rate in any district was ·68 in Bunnu, where vaccination is carried on with more than ordinary difficulty. Whenever the weekly returns during the vaccination season show several deaths from smallpox, vaccinators are at once sent to the place. The Vaccination Report for the year 1891–2 is given separately, and contains much interesting matter. It shows that, though there was a decrease in the number of operations performed, compared with the previous year, the total vaccinations amounted to 812,700, of which 620,604 were primary. Of these primary cases 94·8 per cent. were successful, and of the re-vaccinations 54·21. The results were verified to a large extent. Among 14,222 recently vaccinated children the Sanitary Commissioner found 96 per cent. with successful results. The Deputy Sanitary Commissioner, the Native Superintendents, the Civil Surgeons, and also the Assistant Surgeons, inspected many thousands of others and found that the measure of success above claimed as the average outcome of the year's work had not been exaggerated. Smallpox, like other epidemic diseases, has its periods of activity and comparative quiescence, and there were decided signs in December of 1891 that the disease was much more prevalent than in any other month of the year, and that the record of 1892 would in all probability not be so favourable as that of 1891.

8. *Fevers.*—The deaths registered under the general head of fevers show a large reduction on 1890. In that year the number was 692,511, in 1891 it was 442,254. If both be calculated on the population of 1891, the ratios stand as 21·52 for 1891 and 33·69 for 1890. The district rates of 1891 vary from 14 in Montgomery to 27 in Delhi. The contrast between the figures of the most unhealthy districts in 1890 and those of the same districts in 1891 is very striking, as may be seen from a few examples.

DEATHS per 1,000 of population.

	From Fevers.		From all causes.	
	1890.	1891.	1890.	1891.
Sialkot	83	25	102	34
Gujranwalla	76	26	85	31
Gujrat	69	25	79	29
Gurdaspur	50	23	65	32

The fevers of 1890 were the usual malarial fevers, apparently aggravated by a very heavy rainfall. In 1891 these fevers were remarkably in abeyance. The contrast between the two years would have been even more striking than is brought out by the statistics but for the fact that other diseases came into play in 1891 which were not of malarial origin, but fell to be recorded under the general head of fevers. Typhus and relapsing fevers were reported from several of the frontier districts, and there were two widespread epidemics of influenza. The first, beginning in May, reached its *acmé* in July, and the second, beginning in November, was causing a large number of deaths at the close of the year, and, it may be added, continued in 1892.

9. *Sanitary Defects.*—The sanitary estimate of towns and rural circles which forms Appendix A has been modified so as to give the total death-rate from all causes in each of them, and to show in a separate column the measures which were being taken to remedy the defects in each locality. These are valuable alterations, because they aid the practical work to be done. There is one point, however, in this sanitary estimate which we have not been able to understand, and that is the difference in the number of circles shown in this estimate as compared with the number shown in the statistical tables. To take the first district, Hissar. According to the estimate there are 5 municipalities and 22 thanas in this district, total 27; but in Tables VII. to X. the number of registration circles in Hissar is only 22, and so on with the others. In nearly every instance the number of "thanas" is the same as that of the "registration circles," the "municipalities" in the estimate being extra. And yet the total deaths recorded in Tables VII. to X., as may be seen on comparing the figures with those of Table VI., are the deaths for the whole province, including both town and rural circles. There is, no doubt, some explanation of the discrepancy which we have been unable to find, and we call attention to it because the registration circle is the unit which ought to be observed throughout as the area for which the statistics of deaths and disease should be prepared, and within which the local conditions should be considered in connection with these statistics. In addition to the more local defects in drainage, water-supply, and conservancy with which the sanitary estimate deals, attention has been drawn, in connection with the prevalence of malarial fevers, to the need for larger measures of improvement in the drainage over certain areas, the importance of which is fully recognized by the Government, but, as is observed in the orders on this Report, "these drainage works are expensive, and can only gradually be carried out."

10. *Sanitary Works.*—In actual sanitary work considerable progress was being made. In addition to minor improvements tabulated in the estimate, the following may be cited:—The completion of the Delhi Waterworks and the sanctioning of the first part of a drainage scheme for that city; the extention of water supply and sewerage at Simla; drainage of the towns of Faridabad in the Delhi district, and the extra-mural drainage of the towns of Jallundur and Ludhiana; the sanctioning of a scheme for the water supply of Amritsar; a water-supply project for Dalhousie; the completion of the water-supply works for Peshawur city, and both drainage and water supply at Kohat. In addition, schemes of improvement for other places were being considered, and the preparatory steps taken towards their being formulated and put in hand. Everywhere throughout the Punjab there is more or less evidence that steady progress is being made.

11. *Sanitary Board.*—The Sanitary Board of the province held six meetings during the year. Among other matters which occupied their attention, the following are deserving of notice:—The condition of the water-logged areas of the province, the causes, and remedy; the most urgent sanitary wants of eight towns reported by the Sanitary Commissioner; the improvement of the registration of births and deaths, especially in the frontier districts, and among Europeans and Eurasians throughout the country; and also the draft of a Village Sanitation Act.

27th June 1893.

No. 5.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Burmah for 1891.

1. *Measures for the Improvement of Registration.*—During the year certain steps were taken with a view to effect a more accurate registration of births and deaths, a matter of sanitary administration in which Burmah had hitherto been very backward. The special attention of local authorities was called to the subject, and orders were at the same time issued that test circles should be selected in each district in which, under careful supervision, it was hoped that more trustworthy data might be obtained, which would prove not only valuable in themselves, but also serve as a standard by which the results in other places might be compared. A copy of these orders has not been furnished in the Report, an omission which should be remeded in future, because all such orders should find a place in the sanitary history of the province, where they can be at all times readily available for reference. It is not very clear how many of these test circles were to be brought into operation, or what special form of supervision was to be exercised over them, and although the dates are given from which the test circles were selected, it does not appear at what period of the year the orders actually came into effect. It seems, however, that the test circles were to be confined to certain areas within towns, and that such circles were selected in 16 towns at different dates between

November 1890 and December 1891. In our memorandum on the Burmah Report for 1890, we gave reasons for doubting whether the institution of test circles would be attended with much benefit to registration generally throughout the province, but as the system has been inaugurated, it is very desirable that it should have a fair trial, and that full information should be furnished regarding its working. It would appear that great delay occurred in selecting test circles in certain districts, and that the information obtained from them is incomplete. A full examination of the results for 1891 was therefore not possible, but the statistics of 1892 ought to supply all the requisite data. As a further step towards improvement, the vaccination staff has been directed to aid in testing the rural returns, and in future the Sanitary Commissioner will show the birth and death rates not only for districts as a whole, but also by registration circles, so that the extremes which make up the district averages may receive prominent notice. The vaccinators in testing the registers will at the same time find data calculated to aid them materially in their own special work, both as regards births and also as regards deaths from smallpox, but we would again press the importance of inspection of the registers by all officials on their tours, work which would not take up much of their time, which would supply a good additional check on the local authorities, and, at the same time manifest to the people the interest which the Government take in the subject.

2. *Births.*—Seeing the very great imperfections in the vital statistics, no detailed analysis of the results is called for as respects either births or deaths. During 1891 about 10,000 births were registered over the number in 1890, but the birth-rate of the province which here, and as regards the other statistics, represents Lower Burmah only, was only 20 per 1,000. The district ratios varied from 12 in Thongwa to 30 in Tharrawaddy. The census figures of 1891, which are used as the basis for the annual tables, do not point to disproportion in the sexes as a cause of such extremes, which can only be attributed to imperfect registration. The imperfections of this registration are the more evident if the results be compared with those obtained in other provinces where the system is in more successful operation. The birth-rate of Lower Burmah in 1891 stands at 20, in the Punjab it was 34, in the Hyderabad Assigned Districts 42, and in the Central Provinces 43 per 1,000.

3. *Deaths.*—Similar shortcomings are to be found in the statistics of deaths. The mortality of the province in 1891 is set down in the annual table as only 15 per 1,000. In the three provinces above cited it ranged from 29 to 40. Indian death-rates vary enormously, and no one rate can be accepted as a standard, but it is incredible that the deaths in Burmah in 1891 equalled only 15 per 1,000. The omissions seem to have occurred chiefly in the rural tracts, for whereas the town mortality amounted to 29 the rural mortality registered was only 14. The Sanitary Commissioner on this point observes, "roughly speaking, it may be said that about one-half of the deaths among the rural population escaped registration." The large proportion of male to female deaths recorded, 123 males to every 100 females, is further evidence of the great imperfection of the registration. The districts of the Tenasserim Division yield an average death-rate of only 12, in the Toungoo district of this division the rate was only 9. The 73,190 deaths registered during 1891 are thus apportioned under the different heads:—

Cholera	2,400	= ·52	per 1,000
Smallpox	1,326	= ·29	„
Fevers	35,658	= 7·76	„
Dysentry and diarrhœa	4,162	= ·91	„
Injuries	733	= ·16	„
Other causes	28,911	= 6·29	„
Total	73,190	= 15·93	„

The large number of deaths ascribed to *fevers* and *other causes* is worthy of notice; of the total due to all causes (73,190), no less than 64,569 are referred to those two heads.

4. *The Census in Relation to Registration.*—The population as enumerated in 1891 forms the basis on which the results in this Report are tabulated. According to the census of 1881 the population was 3,653,629, according too the census of 1891 it was 4,595,569; it had increased by 941,940. The figures were obtained too late for thorough analysis, but in next annual Sanitary Report for Burmah it is hoped that their bearing on the registration of the decade will be carefully examined, not only by districts but also by towns. The evidence of the two censuses is not necessary to show the errors in registration, but it may be useful to bring the facts home more clearly and to point where the discrepancies are most marked. Immigration was believed to be a factor which would largely disturb any comparison between the results of the censuses and those of registration of births and deaths, but we observe that the increase in population during the ten years, as noted by the Sanitary Commissioner, has been due in far the greater proportion to an increase of "Burmans or Buddhists;" they account for 811,743; Hindus for 54,065; Mahomedans for 41,622; Christians for 26,551, and other classes for 7,959.

5. *History of the Chief Diseases: Cholera.*—This disease was not very prevalent during the year. It accounted for 2,400 deaths, which were very unequally distributed, the brunt having fallen on the districts of the Irrawaddy Division, and those of the Arakan Division having almost entirely escaped. The facts would have been shown more strikingly on the map, if it had been tinted in different shades so as to illustrate the incidence of cholera in different parts of the country. The disease was widely diffused. Of 817 circles of registration 188 recorded deaths from it, and yet the proportion of villages which furnish the deaths was very small, only 547 out of 17,807 in the province. Making

every allowance for errors and omissions, the general result remains very striking; it is the usual history of cholera, a disease very widely operating, and yet affecting comparatively few localities within the area affected. We observe from the statement given at page 5 that in not a few places the cholera mortality was heavy. In Toungoo, for example, there were 35 deaths or a ratio of 7 per 1,000. In Tamayar circle 79 deaths, equal to 8 per 1,000; in Maubin town 44 deaths, equal to 8 per 1,000; in Taungu Circle 199 deaths, equal to 10 per 1,000. This last is the maximum recorded. Some particulars of the cause of the disease throughout the province, and of the more severe outbreaks would have been instructive, especially if taken in conjunction with the sanitary state of the places in which they occurred.

6. *Small-pox and Vaccination.*—In the Orders of the Chief Commissioner on the separate Vaccination Report for 1891–92, attention is called to the falling off in the number of operations, especially in certain districts of lower Burmah, and also to the diminution in the percentage of success in primary cases, while on the other hand the percentage of success in re-vaccinations was suspiciously high. Particulars are given in the annual statements of the working of the Department both in Upper and Lower Burmah, where it has been long in existence; the results fall far short of those in other provinces. In Lower Burmah during the year the number of persons successfully vaccinated per 1,000 of population was only 21. In Upper Burmah it was only 14. In both parts of the province the percentage of success claimed in the primary cases is the same, 85. In paragraph 45 a statement is given to show the number of cases actually verified by civil surgeons and hospital assistants, but this would be more instructive and constitute a more effective check on the vaccinator's returns if, instead of entering the number of successful cases seen and comparing these with the number of successful cases claimed in each place, mention were made of the total number of cases seen and of the number of these that were found successful. The ratio of success deduced from these figures could then be compared with the ratio of success claimed in that particular locality. Tried by the number of successful vaccinations among infants, the returns are not very satisfactory, for only 20,328 infants in Lower Burmah were protected during the year, whereas the births, even taken at the defective ratio of 20 per thousand, numbered 95,332. The Sanitary Report does not contain much information regarding the history of small-pox in the province during 1890, nor is there any evidence adduced to show that it is being controlled by vaccination. Certainly the deaths of 1891 ascribed to this disease (1,326) were much less numerous than the total of 1890 (3,693), but the statistics of a series of years indicate great fluctuations. In 1886 there was a minimum of only 115 deaths from small-pox in Lower Burmah.

7. *Fevers and other Diseases.*—The deaths attributed to fever constituted as usual a very large portion of the total mortality. The deaths under this head, and also under dysentery and diarrhœa, were considerably in excess of the numbers recorded in the year previous. The statement contained in paragraph 24 exhibits the local incidence of these diseases in the townships of Lower Burmah; of these 98 appear in the statement, whereas in Table No. VI. of the Appendix, a standard form designed to illustrate the mortality in the town as compared with the rural circles of the province, the number of towns given is only 25. Yet most of the 98 are towns of considerable size; with one exception they all have a population exceeding 5,000, and, with four other exceptions, the population of each exceeds 10,000. It would seem, therefore, that many of these towns must in Table VI. be included in the country tracts. Again, in the summary of the sanitary condition of the principal town and headquarter stations in Lower Burmah, which forms paragraph 28, there are differences in names and populations which we are unable to understand, and which cause great confusion. Whether in town or country, the registration circle should be the unit, not only for examining the returns of mortality but also for recording the sanitary state of the locality, so that the one may be compared side by side with the other. Form VI., which is intended to exhibit the results in towns as compared with the country, should show all the towns individually in which the population amounts to or exceeds 5,000.

8. *Sanitary Defects.*—The summary in paragraph 28 already referred to contains many examples of sanitary defects. At the town of Akyab the water derived from shallow wells and tanks was very liable to contamination; the drains in the main bazaar continued faulty. At Kyaukpyu every native house has its cesspit. At Sandoway cesspits are in general use. At Rangoon the supply of water was insufficient. At Pegu a better water supply is much needed; cesspits are used in all native houses. At Prome "cesspools till exist and are regularly inspected. When either nearly full or offensive, these are closed and fresh ones opened. At Shwedaung the water supply was barely sufficient for all requirements. At Yandoon there was over 100 wells in the town, but only three yield water for drinking purposes. From the summary of the reports of the civil surgeons in Upper Burmah we learn some particulars of the sanitary condition of the towns in that portion of the province. At Mandalay the water supply is found to contain a large amount of minerals and organic matter. Cesspits still exist there, and in many other of these towns. At Bhamo the wells are unprotected and conservancy is very defective. At Mogaung parts of the town become waterlogged during the monsoon. Many like examples might be cited, but the above suffice to indicate the main kinds of danger to the public health, which are found in the towns of both Lower and Upper Burmah. From the consideration of the local reports and as the result of personal inspection, the general conclusions at which the Sanitary Commissioner has arrived are that in most municipal towns the drainage is very unsatisfactory, that the water supply is not satisfactory, that, although street conservancy is fairyl well carried out in all the large towns, much remains to be done in keeping the surface drains clean that more public latrines are wanted everywhere and also the general introduction of dust-bins.

9. *Sanitary Works.*—Many of the improvements urgently required are beset with difficulties, owing to the want of funds and other local circumstances, but it is important that the evils themselves should

not on this account be lost sight of, or thought lightly of in their influence on the production of disease. No marked progress was made in the removal of them during the year under report. No new sanitary works of any importance were executed in the province during the year, but Rs. 128,484 were expended by the Public Works Department in Lower Burmah, and Rs. 1,10,462 in Upper Burmah on what are grouped together as "sanitary works." In both, the main item is on account of hospitals, the rest was distributed on water supply, drainage, latrines, markets, and burial grounds. At Rangoon a considerable sum was expended on extending and improving the drainage works, and a large number of house connexions was established, both for drainage and water supply. At Prome, also, a number of private hydrants was added. In other places some of the cesspits had been closed, and other improvements effected in conservancy and drainage One great difficulty in dealing with existing evils has arisen from the want of a sanitary engineer to make a survey and advise what measures ought to be taken. It is very much to be desired that this most important post should be filled up as early as possible.

10. *Sanitary Board.*—No change was made in the constitution of the Sanitary Board, which consisted of a President, four members, and a Secretary. Their Annual Report for 1891 appears as an Appendix to the Sanitary Commissioners' Report. Pending the appointment of a special sanitary engineer, information had been called for regarding existing maps of municipalities, and the nature of the works which appeared to the local authorities to be best designed for improvements in drainage, water supply and conservancy. The two other most important points which engaged their attention were the framing of simple rules for village sanitation, and the introduction of a Bill to provide for this object. On both these questions the recommendations of the Board had been submitted to the Local Government.

27th June 1893.

No. 6.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of the Central Provinces for 1891.

Census of 1881 *still employed as basis of Statistics of Births and Deaths.*—The statistics of births and deaths for 1891 are unfortunately based on the Census figures of 1881. The figures of the Census of 1891 were not, it appears, available, and the only part of the Report in which they seem to have been used is that which refers to the towns. In the 21 Sadar towns named the population shown in the Census of 1881 was 393,519, whereas in 1891 it was recorded as 462,639. This large increase very materially affects the ratios which would thereby have been reduced for both births and deaths in 1891 by over 5 per 1,000. It is to be regretted, therefore, that the total population in districts, and for the province as a whole, could not be employed as the basis of all the calculations for the year. Further particulars must be awaited, not only as respect the more correct ratios for 1891 but also as regards the general bearing of the results of the two censuses on the number of births and deaths registered during the intermediate years—an inquiry of much importance which should be carried out both for each province as a whole and for its component districts and towns.

2. *Births.*—The births registered were more numerous than in any year since 1885, and yielded a ratio of 43·09 on the population of 1881. The districts, all of which show an increase over the year previous, return rates varying from a minimum of 35 in Saugor, to 54 in Nimar. In the first six districts which head the list in Table I. there was an excess of deaths over births amounting to from 1 to 5 per 1,000. In all the others the births exceeded the deaths, the excess ranging between 1 and 21 per 1,000, and the net result for the province as a whole is an increase of 7 per 1,000. No explanation is entered into as to the probable cause of the exceptional position of the first six districts, how far it is due to excess in the births or in the deaths. The mortality was very high in all of them except Saugor. The Sanitary Commissioner does not carry his comparison of the birth-rates beyond districts, but we would suggest that very valuable information might be obtained if the results in the registration circles were compared, and the maximum and minimum of such circles in each district were noted. The results would thus be more localised and afford a basis for their more satisfactory examination. Before leaving the question of births we may note that there is a remarkable similarity in the figures for the Central Provinces and those of the neighbouring Province of Berar, although the ratios for Berar are calculated on the population of 1891, and those for the Central Provinces, as already mentioned, on the Census of 1881. In both, the total birth-rate, the male and female birth-rate, and the proportion of males to female births are almost identical.

3. *Deaths.*—Owing in the main to cholera the deaths were more numerous than in 1890, the rate having risen from 32·52 to 35·54. The district ratios varied between 46 in Hoshungabad and 25 in Bilaspur. In the towns the ratio was 34 and in the country 35. The statement given in paragraph 15, where the rates, taken on the population of 1891 are compared with those on the figures of the Census of 1881, show that in many of the towns great changes have taken place, and that the ratios calculated on the old census are very misleading. In the town of Saugor, for example, the population has increased from 31,072 to 44,674, thereby reducing the births from 28 to 19 and the deaths from 27 to 18 per 1,000. In other instances, as at Hoshungabad, the population had decreased, and corrections have to be made in the other direction. An examination of the circle registration such as

we have already suggested under births would be equally, and, indeed, even more useful for dealing with the statistics of deaths, for in regard to them it is specially needful to ascertain as far as possible the localities where the death-rate is high, so that attention may be at once drawn to them with a view to ascertain, if possible, the cause or causes of the excessive mortality. A simple statement of the range observed in the death-rates among the registration circles of each district—the minimum and the maximum of each—would suffice. Much valuable information is now lost in district averages.

4. *Necessity of Inspecting the Registers.*—Nothing is said in this Report of any measures taken to improve the registration or births and deaths in the province beyond the infliction of fines in municipalities. We believe, as we have frequently urged, that much might be done by constant inspection of the registers, more especially in the country areas. If all officers who move about on tour were called upon to examine the registers, and to compare them with the verbal information they could easily obtain from the villagers regarding their domestic occurrences, not only would there be a certain amount of check on the entries but the people would gradually come to take an interest in the records from seeing that all officials took an interest in them also. District officers, police officers, education officers, could all render valuable assistance in this matter, and besides them there are the others more immediately connected with the health of the province, the Civil Surgeons and the Sanitary Commissioner's vaccination staff. We observe that in the Central Provinces in 1891, besides the 200 odd vaccinators whose work is immediately connected with births, and the 18 district superintendents who are, it is presumed, the civil surgeons, there are 25 Native superintendents who might be employed with great advantage in testing the registers, both of births and deaths, in the manner proposed. Perhaps this system is already carried out, but no mention is made of it in the Report. Some details as to what is actually done would be of interest, not only as regards the extent of inspection but also as regards what facts these inspections generally brought to light.

5. *General Character of the Year.*—The principal feature in the meteorology of the year was the delay in the monsoon, but though it came late, reducing the rainfall of June by 8·15 inches below the average, it was by no means deficient; on the contrary, it was considerably in excess all over the province. In only one or two districts did the people appear to have suffered from the high price of food. The civil surgeons' reports, which are abstracted by the Sanitary Commissioner, are generally favourable, but some of the statements they contain are not borne out by the mortuary statistics. For example, the Civil Surgeon of Bhandara says that "the health of the people was much better than during 1890." According to the statistics the death-rate rose from 29 in 1890 to 34 in 1891. In Raipur it is said that "the general health of the people was good," but the death-rate rose from 26 in 1890 to 31 in 1891. We are glad to see that orders have been issued by the Government of India requiring statistics of deaths, of meteorology, and of the prices of food grains for the year, as compared with those of the preceding five years in certain selected places. In the Central Provinces the places selected are the districts of Jubbulpore, Hoshungabad, Nagpur, Raipur, and Seoni, and the first statement with such information we have seen is contained in this Report.

6. *History of the Chief Diseases. Cholera.*—The year was one of considerable cholera prevalence, for the deaths under this head numbered 21,312, or 16,525 more than in 1890. The mortality equalled 2·42 per 1,000, compared with 0·54 in the year previous. The areas of comparative exemption and prevalence are shown on the cholera map, but the various shadings are not differentiated so clearly as they ought to be. The districts of Hoshungabad, Murwara, Nursinghpur, Damoh, and Jubbulpore, suffered most severely, the cholera death-rate in them ranging from 7·37 to 5·54 per 1,000. The districts of the Wainganga and Mahanaddi divisions suffered comparatively little. The highest rate in a town was 14 0 in the small town of Mohari in the Bhandara district. The extracts from the Civil Surgeon's Reports which are given in this chapter are chiefly taken up with an account of the manner in which the disease appeared to have been imported, and thereafter to have been spread by the sick to other places. The narratives generally are too vague to be of much value, and, what is of more importance, they do not afford a basis for any practical action. The importation theory is too apt to be readily accepted as a satisfactory explanation of a cholera epidemic. The disease was brought to the place and that is sufficient. But the remarkable contrasts between epidemic and non-epidemic years, the prevalence of the disease over certain well defined areas, and the comparative escape of others, the wide distribution of the epidemic over a province, and yet the small proportion of villages attacked, these and many other noteworthy facts that might be cited, all tend to show that the belief in importation affords but a very incomplete solution of the problem. In the Damoh district the Civil Surgeon reports that the disease having been imported it "spread throughout the district, and could "nearly always be traced from village to village and circle to circle by a direct and unbroken chain of "human agency." But this description hardly accords with the statistics which record that out of a total of 1,139 villages in this district only 207 suffered from cholera. Assuming, however, that the facts recorded are correct, and the opinions expressed warranted by these facts, what practical measures can be taken to carry them into action? Sanitary reports are of value only in so far as they lead to something being done to prevent disease. Is it possible, especially in a country like India, to isolate and disinfect the sick, and otherwise control the movements of the population so as to meet the dangers which are now supposed to arise from the want of such supervision, or would it not rather happen that the only result of any interference would be to cause great discontent, and induce among the people a decided aversion to everything in the shape of sanitation? The only practical measures that can be taken must be directed to searching out local defects and remedying them as far as possible, and to this end all reports, both from Civil Surgeons and the other sanitary authorities should be more especially directed.

7. *Small-pox and Vaccination.*—The mortality due to small-pox was less than had ever been previously recorded. The deaths numbered 748, or a ratio of 0·08 per 1,000. The highest ratio in a district was ·27 in Bhandara. In the towns which suffered most the disease was confined to a few deaths, and in many of them no death from small-pox was recorded. These results are so far very satisfactory, and indicative of the success of vaccination. The operations of the Vaccination Department for 1891–92, which form the subject of a separate report, continued to be actively carried on. There was an increase in the total number of operations, and also in the number of successful primary operations. The percentage of success in primary cases was 96·5, and in re-vaccinations 79·48. This last figure calls for some explanation, as it points either to some error in the statistics or to some imperfection in former primary operations. In the neighbouring province of Berar the success claimed for re-vaccinations is 29·4, and this is much more what the ratio ought to be than the Return for the Central Provinces. It appears from the Report that the facts recorded were tested in a large extent by actual inspection, and in the main verified.

8. *Fevers.*—Of the total mortality of 35·54, fevers contributed 21·61, but the proportion varied greatly in different districts, from 8 in Sambalpur to 35 in Nimar. From the figures contained in one of the columns of the sanitary estimate it appears that if taken by registration circles the differences are even more marked, between 7 in one circle and 67 in another. "Fevers" is doubtless a very vague term, and apt to be differently interpreted in different places, but no greater accuracy can be arrived at with existing machinery. In paragraph 41 a table is given containing the result of inquiries made by civil surgeons into the causes of deaths with a view to ascertain what proportion was due to *fevers, dysentery and diarrhœa, chest affections,* and *other causes.* The proportions vary considerably in different places, as was to be expected, but the average of the whole shows that of every 100 deaths 41 were probably due to fevers. It is not explained how the inquiry was conducted nor how the police, who also collected statistics on the subject, were able to make an investigation of this kind. The results of their inquiries are tabulated side by side with those of the Civil Surgeons, and yield a fever mortality of 53 per cent. of the whole deaths. No comment is made on this table by the Sanitary Commissioner, and some further explanation and information would be of interest. The proportion of the total mortality shown in the general mortuary statistics which is set down to *fevers* is over 60 per cent., a proportion greater than that deduced either by the Civil Surgeons or the police.

9. *Sanitary Defects.*—As was to be anticipated in a year of cholera prevalence the death-rate from dysentery and diarrhœa was higher than in 1890, when cholera was comparatively in abeyance. We find accordingly that in 1891 the greatest mortality from dysentery and diarrhœa was, as a rule, recorded in those districts which suffered most from cholera. In the sanitary estimate, page 25, we find numerous instances of excessive mortality under dysentery and diarrhœa, amounting to 6, 7, and even 8 per 1,000. This estimate is designed to show side by side the death-rates caused in each circle of registration by the principal diseases, and the sanitary condition of each of these localities, but as we have before observed it would be more complete if cholera were shown in a separate column, and also the total death-rate from all causes. This statement, if further developed and carefully filled up, is indeed a most important part of the Report; we may, indeed, say the most important, because it would then point at a glance to the places where reforms in local conditions are most urgently required, and record year by year what progress was being made in remedying defects. As the statement now stands in this Report for 1891 it is very incomplete. From 40 towns, including many of the most important in the province, no information whatever is given as to the condition of their drainage, water supply, or domestic cleaning, for opposite them it is said "estimate not furnished." But meagre as the statement is, it yet supplies abundant evidence that in many places there are grave defects under all the three heads under which their condition is described. The total number of circles shown in the statement does not appear to agree with the total given in General Tables VII. to X.

10. *Sanitary Works.*—Of actual sanitary work done during the year the following may be noted:—The excavation of part of the tank at Saugor at a cost of Rs. 2,000, the acquisition of land round the reservoir at Jubbulpore, towards which Rs. 17,716 were paid; at Betul a large tank had been deepened and cleaned; at Nagpur the works for extending the water supply to the civil station and higher parts of the city were completed. At Raipur it is said that "a waterworks scheme has been "matured and is being rapidly carried out." In addition to the above a number of wells have been constructed and repaired throughout the province. Further, a survey was made of the towns of Jubbulpore and Nagpur with a view to the preparation of a drainage scheme. The Village Sanitation Act has been extended to 40 villages of which 33 are in the Nimar district, and in respect of some of these schemes of sanitary reform had been sanctioned. Particulars of these schemes are not given, but it appears from the orders of the Chief Commissioner that in most cases "all that can be done at present is to provide new wells or improve existing ones."

11. *The Sanitary Board.*—Some important changes were made both in the constitution and powers of the Sanitary Board. In addition to the Sanitary Commissioner and to the Superintending Engineer, the Commissioner of the division, the Deputy Commissioner, and the Civil Surgeons, are members within the limits of their respective jurisdictions. The Board was chiefly occupied in considering and giving practical effect to a scheme of village sanitary improvement which was ordered by the Chief Commissioner in October 1891, and also in a further resolution, dated the 27th November. The Chief Commissioner expresses his disappointment with the working of the Board, more especially as to the want of information concerning the actual sanitary work done. It is noted that for the year 1892–93 Rs. 50,000 have been placed at the disposal of the Board for such work, and it is hoped

that, aided by local labour and materials which practically make the total grant equal to about two lacs of rupees, decided progress may be made.

12. *Scheme of Rural Sanitation.*—The orders of the Chief Commissioner above referred to are very important. The objects aimed at and the procedure to be adopted are thus summarised: "(1) grouping of the villages of a district into rural sanitary circles of convenient size; (2) investiga- "tion, by experts, into the sanitary conditions of each circle with special reference to water supply, "conservancy, and drainage, and submission of proposals for improvement; (3) collation of such "proposals with information derived from the district executive authorities as to financial condition "of village, &c.; (4) submission to and consideration by the Sanitary Board of such proposals and "other relevant information and orders by the Board as to sanitary works to be done with distribution "of available funds; (5) issue by the district executive to the village authorities, panchayet, or "mukaddams, of the Sanitary Board's orders and enforcement of the same." As a first step the registration circles are to be reduced in size so as to include twenty adjacent villages (no circle to contain more than thirty), and within these the registration of vital statistics is to be supervised and watched so that any excessive mortality may at once direct attention to the condition of the locality. Four Assistant Surgeons were to be appointed sanitary inspectors, one for each division who would report on the state of the villages in their respective divisions. Inspection would also be made by district officials, the police, tahsildars, &c., and all these reports collated and examined by the Civil Surgeon, whose duty it would be to submit the results to the Sanitary Board. In this way the Civil Surgeon would become in reality what he has been hitherto only in name, the chief sanitary officer of the district. The Board will then issue orders as to the work to be done and apportion the funds available. It is recognised that the funds of the District Councils are insufficient in themselves, and of the Rs. 50,000 available in 1892–93 Rs. 20,000 were to fall on Provincial Revenues. The scheme, it is pointed out, has this advantage, that "it may be restricted in its operation to a few villages and yet "admit of expansion to the entire Province without losing its simplicity or changing its aim or "procedure." We have noted the provisions of the scheme in some detail, because it is a comprehensive attempt to deal with the most difficult of all the difficult problems of sanitation in India—the improvement of the villages. We shall watch the results with much interest. It would have strengthened the Board very materially if it could have been aided by special sanitary engineering skill, for, although the works contemplated are only to be simple and such as can be constructed by common village labour, much of the success desired depends on the adoption of a proper scheme of improvement at the commencement suited to the particular wants of each place. We are well aware, however, that the addition of a Sanitary Engineer to the Board would have materially added to the cost, and sufficient funds do not seem to be available. Under the new scheme the importance and responsibility of the Sanitary Commissioner of the Central Provinces are very largely increased.

27th June 1893.

No. 7.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Assam for the year 1891.

1. *Registration of Vital Statistics. Births.*—The registration of vital statistics in this province continued to be in a very backward state during 1891. The birth-rate according to it was only 28·59, which even shows a falling off from 30·56, the ratio in 1890, and, judging from the experience of all those other parts of India, the records of which bear evidence of greater accuracy, both these ratios probably fall much short of the actual fact. The diminution of the birth-rate in 1891, as compared with 1890, however, does not arise from any diminution in the actual number of births registered. On the contrary, the number of births registered in 1891 was 143,548, whereas the number in 1890 was only 138,326. The lower ratio is due to the fact that the rate for 1890 was calculated on the Census of 1881, whereas the rate for 1891 is calculated on the larger population shown by the census of that year. The details given for districts as usual yield very different results. The district ratios fluctuate between 21 and 34; the proportion of male births to every 100 female births varies from 104 to 113, and in six out of the total of nine districts we find the birth-rate exceeded by the death-rate, so that, for the provinces as a whole, during 1891, this excess of deaths averaged 1·32 per 1,000. The figures, so far as they are given, all point to deficiency in the birth registrations as the probable explanation of these results, but it is very desirable, with a view to forming correct conclusions on this and other points concerning the vital statistics, that there should be a more complete examination of the details, and this can only be done by taking the circles of registration in each district and showing how the average of this district in composed. Is it made up of great extremes, or does a similar rate prevail, with only occasional and slight variations? If the extremes are marked, then some enquiry is evidently required as to the cause to which this is to be ascribed, whether carelessness or inaccuracy in the registration, or, it may be, to some disproportion in the sexes not infrequent in some Indian towns, whereby the birth rate is necessarily below the ordinary standard. In Assam we observe that there are 632 circles of registration, the number in each district varying between 15 in Cachar and 159 in Sibsagar. The examination of all these details would, no doubt, involve considerable work, but it is work in which the local authorities of each district might render much assistance, and it is very necessary, if registration is to attain any accuracy, that the importance of the registration circle as the unit, the statistics of which require careful examination, should be fully recognized:

2. *Deaths.*—These remarks have been made with reference to births, but they apply with even greater force to deaths. In respect of them the average for a province or a district is of comparatively little use. It is essential to deal with individual localities, and to ascertain in what way high death-rates are associated with causes of disease in particular places. The number of deaths recorded in Assam in 1891 was 150,156, or a ratio of 29·91, whereas in 1890 the number, 134,195, yielded very much the same ratio, 29·64, a discrepancy which, as in the case of the births, is to be explained by the differences in the censuses on which the calculations are based. The chief facts in the distribution of the mortality are that in the Surma valley there was a large increase, while in the valley of the Brahmaputra there was some diminution. The district ratios vary from 19 in Sibsagar to 35 in Goalpara and Darrang. The variations in the relative male and female mortality are indications of imperfect registration. The average for the province is 112 males to every 100 females, but this includes extremes of 106 in Goalpara and 130 in Kamrup. The results in the towns is particularly disappointing. In the nine *sadr* towns, in which it appears that registration is compulsory, the death-rate varies from 14 to 54 per 1,000. This alone would not suffice to prove negligence, because in Indian communities the mortality varies greatly in different years, but where we have at the same time, as we have here in these *sadr* towns, birth-rates of all grades between 3 and 35 per 1,000, no further evidence is needed to show that the records are altogether untrustworthy. The same may be said in a minor degree of the statistics of the 11 subdivisional towns, where also registration is supposed to be compulsory.

3. *Improvement of the Registration.*—Both the Sanitary Commissioner and the Local Government are fully alive to the serious defects in registration of births and deaths. In the orders on this Report for 1891, the Chief Commissioner draws particular attention to the great neglect of registration, especially in the towns. He refers to the orders on the subject of registration generally which had been issued previously, and which, so far, had produced such little results, and again enjoins greater attention to this important matter. "Both the Sanitray Commissioner and the Commissioner "of the Assam valley districts," he adds, "should during their tours of inspection make special "inquiries in regard to the steps taken to secure accurate registration of vital statistics in compulsory "areas, the Sanitary Commissioner giving the result of his inquiries in his annual report, with any "suggestions which he may have to offer for improving the system of registration he finds in force "in each district." The Sanitary Commissioner has already endorsed a proposal made by the Inspector General of Police that his officers and higher subordinates should when on tour inquire into the number of births and deaths recorded, so that they may be compared with the entries in the register. It is very desirable that these entries should be checked and compared with the information obtained on the spot, not only by police officers, but also, as far as possible, by all other officers on their tours of inspection. It does not appear how far the civil surgeons and the vaccination staff have yet aided in the important work of inspection, where their aid might be of special value, not only in improving the statistics but also in examining the local conditions associated with any excessive mortality. Another measure directed towards improved registration, which we have already suggested, is the careful examination by the Sanitary Commissioner in his annual report of the extremes of both birth and death rates returned by the registration circles of each district. Without such an examination of the individual units of registration, it is not possible to determine where the sources of error lie.

4. *The Census of* 1891.—The vital statistics of 1891, as has been already mentioned, are calculated on the census population of that year. It appears that during the ten years since the previous census was taken the population had increased by 494,125, and an examination of the figures in the Report for 1890, which are based on the Census of 1881, shows that the increase was general over the different parts of the province. The Sanitary Commissioner has not discussed how far the Census of 1891 agrees with the records of births and deaths and their results on the Census of 1891, and it is very desirable that this should be done, not only by districts, but also for all principal towns. A few of the other census figures would also be of interest in a sanitary report, such as the proportion of the sexes and the proportion of young children in different communities. The discussion of these and other matters probably awaited the full completion of the Census Report.

5. *Mortality from Different Causes.*—Before considering the history of some of the chief diseases in Assam during 1891, we may glance at a very interesting table which the Sanitary Commissioner gives at the top of paragraph 13, and in which he contrasts the number of deaths under all recorded heads in 1891 with the number under the same heads in 1890. We have added the ratios under each for 1891, as they will be useful for subsequent reference, but the actual numbers, owing to the difference in the census figures, form the best basis for comparison.

Causes of Death.	Number of Deaths.		Ratio per 1,000 in 1891.
	1890.	1891.	
Cholera	153,396	23,882	4·76
Small-pox	1,401	2,361	·47
Fevers	74,779	75,965	15·13
Dysentery and Diarrhœa	13,015	14,418	2·87
Injuries	1,729	1,597	·32
Other causes	27,875	31,933	6·36
All Causes	134,195	150,156	29·91

It is remarkable that under every disease there is a decided increase in the deaths, but more especially under cholera, small-pox, and that very extensive group which is embraced under the general head of "all other causes." The general unhealthiness of the year, the Sanitary Commissioner believes, manifested itself chiefly in the direction of cholera and *kala-azar*, and the increased mortality recorded under dysentery and diarrhœa he would ascribe to these two diseases, in both of which such symptoms are prominent.

6. *History of the Chief Diseases: Cholera.*—Cholera was extremely prevalent. The mortality it occasioned was greater in 1891 than that recorded in any previous years. For the province as a whole the death-rate under this head was 4·76; for the Surma Valley separately 4·33, and for the Brahmaputra valley 5·29. Both the districts of the former valley, Cachar and Sylhet, suffered severely. In the latter valley the disease prevailed with very different intensity, for, whereas four of the districts returned cholera deaths in proportions varying from 4 to 11 per 1,000, in the remaining two the ratio was under 2 per 1,000. Of all the towns, Silchar suffered most, the deaths from cholera in it having exceeded 16 per 1,000. A statement is given for each district which shows very clearly the incidence of the disease both by locality and season. We have already seen how much more severely certain districts were affected by cholera than others, and from these statements we learn how, even in the same district, certain parts suffered much while others either escaped altogether or suffered but slightly. In the Darrang district, for example, where the maximum mortality from cholera (11·49) occurred, 49 out of the total of 54 registration circles returned deaths from cholera, but these were limited to 335 out of a total of 1,674 villages. While avoiding any positive assertions on the very difficult question of the share of human intercourse in the propagation of cholera, the Sanitary Commissioner seems inclined to attribute the disease to importation, and to ascribe its great prevalence in 1891 to two unusual events. One of these was a special festival in Bengal, which had recurred after 30 years, and to which many pilgrims went and returned thence both to the Surma and Brahmaputra valleys suffering from cholera. The other was the Manipur expedition, which brought a great influx of people from India, among whom cholera was very prevalent. The facts are not given with sufficient precision to warrant any decided conclusions being drawn from them, but, so far as the pilgrims are concerned, there seems good ground for believing that they were not the means of distributing the cholera, but merely victims of the prevailing epidemic. For example, the Civil Surgeon of Goalpara reports, "The great festival of Ardhoday took place in February 1891. This "festival was a special one, as it was last observed about 30 years ago. For this festival all who could manage it went to Calcutta or to Murshidabad to bathe in the Ganges. The pilgrims returning came back with cholera. Every steamer arriving here (at Dhubri) had cholera-stricken pilgrims on board. This evidence reads strongly in favour of the pilgrim theory of dissemination, but if we turn to the statistics of cholera month by month we find that in January, the month before the festival, cholera had caused 998 deaths in the province; of these, 902 occurred in the Surma valley, and it is worthy of notice that in February, when the returning pilgrims had come back, the number of such deaths was less than it had been in January (only 680). In the Assam portion of the province, in the same way, cholera had appeared long before the pilgrims had returned. It caused 96 deaths in January. Of the six districts in this Assam valley, five contributed to this total, though the contribution of all of them was very small, excepting Kamrup and Darrang. It is deserving of notice that in Kamrup, just as in Sylhet, the cholera deaths of January *before* the pilgrims could have returned were more numerous than they were in February, when these are supposed to have imported the disease. Whatever opinions may be entertained on the question of human intercourse, we entirely concur with the Sanitary Commissioner in his opinion as to the great importance of sanitary improvements as the great, and we believe the only efficient, means of preventing cholera. "I find," he says, "that wherever "sanitation has not been brought into practice and use, there cholera, when it appears, has a greater "and more serious incidence," and under this general head of sanitation he, very properly, includes not only pure drinking water, but also good conservancy, good food, and good drainage.

7. *Small-pox and Vaccination.*—According to the statistics which are contained in the separate report on vaccination, the special work of this Department has made great strides during recent years. In 1882–83 the total number of persons operated on in the province was only 57,619, in 1891–92 it was 197,572. In the first of these years the number of successful cases was only 51,516, whereas in the last it had risen to 184,225. This is a most satisfactory advance, especially as it has been steady and unchecked from year to year. In 1891–92 the results in many other respects are also good. The percentage of success in primary cases was high, and a large number of young children were protected. These results, moreover, were, to a large extent, verified by actual inspection on the part of the Civil Surgeons and their subordinates. But, although so much progress has been made, a comparison of the number of infants protected with the number of births during the year shows how much still remains to be accomplished before the Vaccination Department can expect to exercise efficient control over small-pox. In 1891 the number of births registered was 143,548, and this number was, as already shown, in all probability much below the truth. The number of infants under one year who were successfully vaccinated in 1891–92 by the vaccination and dispensary staffs combined was only 22,256. Under these circumstances, it is not surprising that no very decided evidence is forthcoming of the influence of vaccination in preventing small-pox. The Sanitary Report for 1891 shows that the year was one in which small-pox manifested considerable activity, the deaths from that cause having been 960 in excess of the number for 1890. The increase was not confined to one part of the province, but was very generally distributed. The statistics which are supplied at page 15 are the district deaths from small-pox in 1891 and 1890, but for the preceding five years 1885–89 the annual average only is given. With a disease such as small-pox, which has its periods of decided rise and fall, the actual deaths of each year would be more useful for comparison.

8. *Fevers and Kala-azar.*—The number of deaths recorded under fevers was greater than in the year previous, 75,965 against 74,779, but, owing to the introduction of the new census figures, the ratio of mortality is less, 15·13 against 16·52. The increased number of deaths was almost entirely confined to the Surma valley; in every district of Assam proper the number was somewhat less than in the year previous. But in both years the lower portions of Assam proper suffered much more severely from fevers than those of the Surma valley. Goalpara returns 26 deaths per 1,000 from this cause, Kamrup 21, and Darrang 15. In the Surma valley the average was 13. The extremes in the fever death-rates may be seen in annual form No. VI., where the district rates range between 7 and 26, and the town rates between 4 and 46, extremes which it is to be feared are in great measure due to imperfect registration. The Sanitary Commissioner again recurs to the increasing deaths in the province recorded under fevers, and this he attributes at least in part to the advance of *kala-azar*, the special disease which has been the subject of much comment in recent Assam Sanitary Reports. In 1891 some attempt was made to separate this disease as a cause of death from the other fevers with which it has been hitherto returned, and the result has been that 9,937 fatal cases of this disease have been registered. Much interesting information is given in this report regarding *kala-azar*, commencing with the time when it first attracted attention. The Sanitary Commissioner is of opinion that it is a new disease in the province; that it was probably imported from some neighbouring Bengal district; that it is steadily advancing, the medium of its spread being the *dochmius* or *anchylostomum* parasite, which is regarded as its distinctive feature; that in respect of this parasite it is the same disease as the *beri beri* of Ceylon, but that there is in *kala-azar* "the additional element of intense malarial poisoning." These main conclusions were summarized in our Memorandum on the Assam Sanitary Report for 1890, as well as the practical measures for carrying out improvements in water supply and other sanitary requisites for the prevention of this disease, in all of which we concur, and we should be glad to know how far they have been actually carried out, a matter on which information is deficient. It is now proposed apparently to exercise a more strict supervision on coolies entering the province. A number have been rejected, and the Sanitary Commissioner has "submitted to the Chief Commissioner full details of such rejections, including the districts from "which they were recruited, with a view to measures being taken to put a stop to the admission into "gardens in this province of such coolies who come from the recruiting districts so evidently infected "with *anchylostomiasis.*" These remarks have been communicated by the Chief Commissioner to the Local Governments concerned, "with a view to the adoption of any preventive measures which may be possible." We much fear that any such measures must fail in the desired object, while, no doubt, their introduction will offer a new obstacle to the importation of labour into the province. If the presence of the parasite were a diagnostic sign of ill-health, the case would be different, though it would still be attended with great practical difficulties. But it would appear that the parasite is to be found in many persons who are to all intents and purposes healthy. Dr. Dobson, we are told, in the Gauhati jail, "found this parasite in a large proportion of prisoners who were to all appearance perfectly healthy;" 104 healthy looking coolies showed 65 per cent. of such infection. Dr. Dobson "also found that *anchylostoma* can be discovered (generally a few in each case) in over 31 per cent. "of the chuprasies, peons, and topazes who accompany the coolies to Dhubri, those chuprasies, &c., "being generally healthy persons." It is very desirable that full inquiry should be made on every point concerning this very fatal disease known under the name of *kala-azar*, and one of the most important of these points is to ascertain what is its history in Rungpore or any other district from which it is believed to be imported into Assam. Does it exist there under the same or similar aspect to that observed in Assam? Is it equally fatal? Is there any evidence that it has spread or that it is spreading in those parts? Is the peculiar parasite to be found among the people there, and, if so, how far is its presence compatible with health? In what proportion is it found in a person apparently healthy compared with the proportion in which it is found in a person unmistakeably suffering from *kala-azar?* Much will depend on the result of these and the many other local inquiries which such an investigation would suggest, but we are inclined to believe, so far as the facts now stand, that too much importance has been attached to the parasite, that its presence has been too hastily assumed to be the *cause* of the disease, whereas it may yet be proved to be a consequence, or merely an accompaniment of it. In order to account for the frequency with which the parasite is found among persons apparently in excellent health, and especially among those entering the province of Assam for the first time, the Sanitary Commissioner says: "My opinion is "that the health of the subject of the *anchylostomiasis* is not affected until the parasite has "sufficiently increased in numbers from fresh infections after arrival in Assam, or from reduction of "the vital powers from overwork, insufficient food, sickness, &c., in a new climate." The last clause would seem to point to the real explanation of the facts. The existence of the parasite in the human body seems quite compatible with health, but when exposed to unhealthy influences the vital powers are lowered, the parasite, as one of the signs of these failing powers, increases, and other symptoms, such as enlarged spleen, anœmia, &c., also set in. Whatever may ultimately be decided on this point, we are fully persuaded that the best practical method of dealing with this very important matter does not consist in attempts directed to prevent the importation of the parasite, which, under the circumstances, could never be successful, but in the improvement of the local conditions under which the people live.

9. *Sanitary Defects.*—As a first step towards such improvment, it is necessary that the existing defects should be pointed out, and in such information this report is deficient. At page 49 a statement is given in which columns are provided for a description of the water supply, drainage, and conservancy, with other columns for the population and death-rates. The statement is good so far as it goes, but it refers to only 23 towns or stations of the province. There is no general

" sanitary estimate " for towns and villages and villages also, such as appears in most of the other Sanitary Reports. Some of the 23 places named return a very heavy death-rate, and defects, especially regarding the water supply, are frequently noted, but in regard to some of these more particulars are desirable. For example, the water-supply of Haila-Kandi is pronounced to be " bad," and that of Dhubri " good." A concise account of the source of supply and any dangers to which it is exposed would be useful for practical purposes. In the chapter which deals with civil sanitary works, and in which a short *resumé* is given of the income and expenditure of each municipality, incidental mention is made of some sanitary defects, such as the dangerous position of the night-soil burying ground at Sylhet in relation to the Surma river, the numerous filthy tanks at this place, which are also dangerous as a source of supply, and the want of proper conservancy as regards the private latrines.

10. *Sanitary Works.*—Mention is made in Chapter X. of certain minor improvements which had been effected in some of the municipalities during the year. No work of any magnitude was executed, but, as may be seen from Column 9 of the statement at page 49 of the Report, many recommendations and suggestions were made by the Sanitary Commissioner as the result of his inspecting municipalities. In reviewing this part of the sanitary work of the year, it is gratifying to note that, in the opinion of the Chief Commissioner, " on the whole progress is being made in " municipalities, stations, unions, and towns in carrying out sanitary improvements," and that he " was satisfied that municipal commissioners, station committees, and district and subdivisional " magistrates were doing all in their power, with the funds at their disposal, to carry out " suggestions." The Chief Commissioner attaches first importance to a good water supply, and the attention of the local authorities has been drawn to the necessity, in the interests of the public health, for providing wells in place of tanks, and protecting them as far as possible from all sources of pollution. The state of the finances unfortunately compels the province to be contented for the present with small endeavours, and more ambitious schemes must lie over until the necessary funds are available. In the meantime, however, much may be done by simple means directed to ensuring greater cleanliness in every way, and by making sure that money is not being spent on any schemes of improving the public health except such as, beyond all doubt, are certain to be of use.

11. *Sanitary Board.*—The proceedings of the Sanitary Board of the province are shortly summarized in Appendix B, at page 48. The Board consists of the Sanitary Commissioner, the Secretary to the Chief Commissioner in the General and the Secretary in the Public Works Department, with the Assistant Secretary to the Chief Commissioner in the General Department as Secretary. The Civil Surgeon of Shillong was also a member. The objects aimed at may be said to have been generally the improvement of the water supply of villages, of their drainage, and their conservancy. So far their work seems to have been mainly that of suggestion and recommendation.

27th June 1893.

No. 8.

Memorandum by the Army Sanitary Commission on the Rajputana Sanitary, Vaccination, Dispensary, and Jail Report for 1891.

1.—*Registration of Births.*—The principal events of the year are concisely set forth in the introductory note by the Agent to the Governor-General. We do not propose to repeat them, or to enter into a lengthened review of this Report. The remarks we made in the Report for 1890 apply in great measure to this Report also, and we shall therefore confine ourselves to a few practical points which deserve attention. Among these, the first that claims notice is the registration of births and deaths. This important work seems to make very little progress towards accuracy. To begin with the births. Out of a population of 542,358, according to the Census of 1891, only 11,566 births were recorded, or a ratio of only 21·32 per 1,000. About one-half of the actual deaths must be omitted altogether. The imperfection of the statistics is evident, not only from the average low ratio, but also from the details of which this average is made up. The rate in the 23 different places named in Annual Form No. 1 varies from 10·75 to 76·85. This last extraordinarily high rate is returned by the Ajmere suburbs, and it is worthy of notice that one of the lowest rates (11·50) is returned by Ajmere town. Then, again, the great preponderance of male to female births is itself proof of great negligence in the registration. For Ajmere and Merwara districts, to which the figures we are now quoting refer, the average preponderance is 124 male to every 100 female births, but many of the places named show a preponderance far in excess of this, reaching a maximum in the town of Nyanagar of 162 male to every 100 female births. When the results within British territory are so unsatisfactory, it is not surprising that those in Native States are no better than they are. Among them, we have a general birth-rate of 19·63, not far short of the rate for Ajmere and Merwara, but this general rate is made up of local rates varying between 4·83 and 67·63. The difficulties of securing an accurate or even an approximately accurate record of births, especially in Native States, must be very great, but more might be done to obtain more accurate results within British territory. It is not explained what system of registration is adopted, nor what measures are taken to inspect the current records. Without some system of check and inspection little improvement can be expected.

2. *Registration of Deaths.*—Similar remarks apply to the registration of deaths. In Ajmere and Merwara a general rate is recorded of 20·23 per 1,000, but this general rate is the outcome of local rates varying from 8·92 to 77·51 Mortality in India, no doubt, fluctuates greatly in different years and different places, but such extremes seem hardly credible. The excessive ratio of 77·51, we observe, comes from Ajmere suburbs. Was any local inquiry made to test the truth of this startling death-rate, or to point out the error, if error it proved to be? Again, the statistics of Ajmere and Merwara furnish general statistics of the deaths of 123 males to every 100 females. This is in itself an unexpected result, but the contrast between the male and female mortality in many places is even more striking than this, and particularly in the Ajmere suburbs, where the male mortality is entered as 64·18 and the female mortality as 105·45. We would suggest that in the case of such abnormal results local inquiry should be made and the results explained in the Report. The statistics of deaths in the Native States affords examples of similar extremes in the mortality. The lowest rate, 9·13, was recorded in the Jhallawar State, and the highest, 50·29, in the city of Dholpur. In the Native States the deaths are distributed under the great heads of Cholera, Small-pox, &c., but there is no division according to age or among rural tracts in contradistinction to towns. The information on these points which the statistics of Ajmere and Merwara supply show a general death-rate of 26·39 in the towns compared with only 18·51 in the districts. In regard to deaths among infants, which form such a large part of Indian mortality, the rate in Ajmere and Merwara is below that of every other province, and much below that of most of them. For male infants under one year it appears as 126, and for females as only 102. In the other provinces the male rate varies between 141 and 397, and the female rate between 101 and 340. In the town of Madras during 1891 the mortality of infants of both sexes under one year of age is returned at the extraordinarily high ratio of 427·5 per 1,000. The statistics of deaths according to age are specially open to error, but there can be little doubt that the infant mortality is a matter which specially demands inquiry.

3. *History of the Chief Diseases: Cholera.*—The year was very unhealthy. The rainfall was much below the average, and this, following on the scant fall of the year previous, caused a want of fodder. The cattle died in large numbers, and there was widespread distress in Ajmere-Merwara. The year was further characterized by an epidemic of cholera, which was, in some parts of the country, severe and prolonged. In Ajmere-Merwara the cholera deaths, which amounted in 1889 to 55 and in 1890 to 408, reached in 1891 a total of 532, but it is worthy of notice that the disease was entirely confined to the northern and central divisions of Ajmere. In the southern and south-eastern divisions of Ajmere and also in Merwara not a single death from cholera was reported. In the Native States the cholera mortality in 1891 was little more than it had been in the year previous, 2,414 deaths in 1891 compared with 2,338 in 1890. Seven of the Native States seem to have escaped altogether. As we remarked in our Memorandum on the Rajputana Report for 1890, a cholera map would be of great assistance for the better understanding of the events of each year, and we trust that this want may be supplied in future reports. We have examined the details of Table No. VII. in order to see if some of the excessive death-rates already referred to in Ajmere-Merwara were due to cholera, but no single place seems to have suffered in any great degree. The highest cholera death-rate is 7·09 in the rural circle of Goella, and in the suburbs of Ajmere, with a total of 77·51, only 4·28 was ascribed to cholera. The chief part is entered under the head of fevers. It is of interest to note that the Merwara battalion at Ajmere remained free of the disease, and also the jail, although prisoners to the number of 448 were sent in from parts of the district where cholera was prevalent. More information is desired regarding the sanitary condition of the towns and rural circles which suffered most.

4. *Smallpox and Vaccination.*—During 1891, 561 deaths from smallpox were registered in Ajmere-Merwara and 426 in the Native States. In Ajmere-Merwara, Ajmere town and suburbs suffered more than any other places, the smallpox mortality in the one being 4·87, and in the other no less than 8·39, a disappointing result at the head-quarters of the division. Vaccination continued to make progress. In Ajmere-Merwara the total number of successful primary operations was 12,703, and in the Native States 228,164. In both primary operations and in re-vaccinations the amount of success attained was great. For Ajmere-Merwara it averaged 98 for one and 94 for the other. This last ratio was suspiciously high, but great care has been taken to verify the Returns. Vaccination Statement No. 1 fills up the columns showing the "average annual number of persons " successfully vaccinated during the previous five years, and the ratio per 1,000 of the population," for Ajmere-Merwara as a whole. A more detailed statement would be useful. It is important to show such results place by place, so as to compare the history of smallpox in each with the work of the vaccinators.

5. *Sanitary Works and Progress.*—In the Ajmere Division important steps had been taken to improve the sanitary condition of the town of Ajmere. The prolonged anxiety regarding the water supply which had attended the drought of 1890 and 1891, and the impossibility of supplying the much-felt want of water by wells, has led to the carrying out of a scheme under which a supply is pumped into the city from a lake five miles distant. The result is reported to have been successful, but, in order to make it still more secure, another reservoir was being constructed at a higher level than the town, in which some of the water which has hitherto flowed on into the Anasagar lake will be intercepted, and from which it will flow on to the city without the aid of pumping. In addition to this great improvement, from which much increase to the health and comfort of the people may be anticipated, other measures of a minor character have been adopted in the interests of the public health, chiefly connected with the better disposal of the sewage both of the town and the neighbouring small fortress of Taragarh. In the Native States, although there are no great works to be spoken of, there is decided evidence of progress. In the Ulwar State the important question of village sanitation

has been taken up by the Durbar, and local municipal committees have been established, whose aim will be to improve the sanitary condition of the villages within their respective jurisdictions. The Chief Medical Officer, Brigade Surgeon Lieutenant-Colonel Spencer, by whom this Report has been drawn up, and who has had long experience of Rajputana, we are glad to see, writes very hopefully on the position and prospects of sanitary work in this part of India. "It appears, then," he says, "that "instead of sanitation being regarded as merely a curious and unpleasant European hobby, it is now "in several States looked upon as a subject of some importance, and though the progress made in "the endeavour to change immemorial customs must be slow, there seems no reason, if patience and "tact be exercised, why the benefits to be derived from obeying the laws of health should not be "more widely appreciated year by year."

6. *Jails.*—In the Ajmere Division there is only the one jail, at Ajmere. Here the results were not so favourable as in the year previous, for the mortality rose from 7·83 in 1890 to 27 in 1891, the expression of three deaths in the one year and 11 in the other. In individual jails, especially where, as in this instance, the number of prisoners is not large (about 400), annual fluctuations are to be expected altogether apart from local conditions. We observe, however, that there had been some overcrowding, which, no doubt, acted prejudicially. Steps were being taken to obviate this evil. The 14 Native States which furnished returns include an average population of 4,480 prisoners, and among them the death-rate was 33·70, which, though higher than that of Ajmere, was considerably under the general rate for the Native State jails in 1890. But, although these figures represent the average of all the Native State jails taken together, they are the outcome of very different experience in individual places. We find, in fact, from paragraph 124 of the Report, that the mortality varied between 7 and 108 per 1,000. It would be an advantage if the statistics of all the jails were given in tabular form one by one, so that the results might be more conveniently compared. We note that in many of the State jails important improvements were being carried out, and that, in particular, measures were in progress to prevent overcrowding. Such a record is very satisfactory.

18th July 1893.

No. 9.

Memorandum by the Army Sanitary Commission on the Medical and Sanitary Report of Coorg for 1891.

1. *Census of* 1891.—The tables of vital statistics show that the population of Coorg, according to the Census of 1891, was 173,055, or less by 5,247 than it had been at the previous Census of 1881. The Civil Surgeon of Coorg, who has prepared the Report, has made no reference to the census, or to any of the many interesting points connected with it which have such a direct bearing on the sanitary condition of the people, and on the statistics both of births and deaths. Nor has any attempt been made to compare the population as disclosed by the Census of 1891, with the figures to be obtained by adding all the births registered during the ten years to the population of 1881, and deducting all the deaths. In addition to the diminution of population shown by the Census of 1891, another feature in the results deserving of notice is the excess of males over females. Of the total of 173,055, 95,907 were males, and only 77,148 females.

2. *Registration of Births and Deaths.*—Some little advance seems to have been made in the registration of vital statistics. The births which in 1890 equalled only 15·25 per 1,000, in 1891 rose to 20·31, which is a nearer approximation to the truth, but the deaths recorded, even at the low ratio of 21·19, exceeded the births. In regard to registration, we would call attention to the suggestions for its improvement which were made last year in our Memorandum on the Coorg Report for 1890, to the effect, that in the tables each of the six registration circles should be entered separately, and the results shown for each of them, as well as for the province as a whole. In Table VI., also, the municipal towns should appear. We need not repeat what we have already so frequently urged for all the provinces, that the registers should be constantly inspected by all officers on tour, and that in this manner very valuable aid might be rendered by the vaccination staff, who would, at the same time, be obtaining most important information for their own special department. We observe that the Commissioner has insisted on a stricter scrutiny of the registers.

3. *History of the Chief Diseases: Smallpox and Vaccination.*—The most marked feature in the health history of 1891 in Coorg was an epidemic of smallpox, which caused 476 deaths compared with only 34 in 1890. The disease was general and fatal in all the circles of registration. According to the figures in the statement at page 12, vaccination of late years has made very great strides in Coorg. Ten years ago, in 1882–83, the number of persons successfully vaccinated was only 4,044; in 1891–92 the number was 9,885, yielding the high proportion of 54 successful cases per 1,000 of population. The statistics of vaccination for 1891–92 are all satisfactory and indicate progress, except the high percentage of success in re-vaccinations (89·38), which is suspicious. The Inspector verified the results in 6,887 of the cases, a very large proportion. On the other hand, the epidemic of smallpox, with its 476 deaths, is a great fact on the other side to show that the protection was still insufficient. It is remarkable that of the total deaths only 28 are returned in infants under one year, and 123 in children under twelve. Another anomaly is, that while the monthly maximum number of fatal cases (84) occurred in December, the next highest number (69) occurred in the month of August,

a time when in India, smallpox is generally at its minimum, and, in fact, almost completely in abeyance. Some particulars as to previous epidemics of smallpox in Coorg before vaccination had been so widely practised, would have been of interest, and have aided materially towards a just estimate of the value of the vaccination which has been done. The Civil Surgeon records his opinion that into one taluk the disease had been imported from Mysore, and into another probably by coolies from South Canara and Malabar. But such conclusions, however satisfactory they may seem, are of very little practical value as regards prevention. Vaccination, if it is to afford real protection, must be such as will prove thoroughly efficient when danger threatens, or little confidence can be placed in it.

4. *Cholera.*—Again, during another year, Coorg was almost entirely free from cholera. The total deaths registered under this head in 1891 was seven; in 1890 the number had been five. In the short account given it is said that "immediately the first case was reported, stringent orders were "issued regarding disinfection and isolation of the cases, which evidently prevented the disease "assuming an epidemic form." In our Memorandum on the Coorg Report for 1890, we remarked on a similar statement regarding the few cholera cases of that year, and what we then said applies with even greater force to the more positive statement now made. It is not possible to accept the conclusion that an epidemic had been prevented by disinfection and isolation without very definite proof, because there are two sets of facts which are opposed to it. First, we know that instances are constantly occurring in which, without either of the precautions named, the disease has been confined to a few isolated cases, and secondly, there has been ample experience to prove that in India, such precautions have entirely failed to prevent an epidemic. The matter is of importance, because, as we observed last year, "there is too great an inclination to trust to the protection which such measures "are supposed to confer, and therefore to neglect those sanitary improvements in which we believe "the only real protection is to be found." It is not stated how many persons were attacked with cholera in 1891. The seven fatal cases were reported between the 11th and 25th November, from four different villages. A full account of all such occurrences should be given, so that the results may be fully tested. The date of each case, the time and mode of disinfection applied, and the degree of isolation attained, are all important points to be noted, as well as the agency by which these are carried out. The checking of a cholera epidemic, if it can indeed be checked by such means, is a question, not only of interest, but of real practical moment in Indian village life, and every information tending towards its satisfactory solution should therefore be recorded. It is to be feared that there will be ample opportunity of testing the efficacy of such measures, not only in Coorg, but also in all parts of India. We would again draw attention to the omission of the cholera map, and of the prescribed statement which should be attached to it.

5. *Sanitary Works.*—On sanitary works, Rs. 1,432 were spent by the Public Works Department, and Rs. 4,597 by the municipalities, but the few original works were of a very minor kind. Among the improvements, repairs to roads and buildings are included. The principal town of the province (Merkara) evidently stands much in need of sanitary reform. Under the three great heads of conservancy, drainage, and water supply, there are in it manifest evils to be dealt with. We are glad to observe that steps have been taken in this direction, and that a water supply scheme, to which money has been very liberally subscribed by the townspeople, now only awaits sanction. For the town of Somvarpet, also, improvement is in prospect, as a merchant has offered to bear the whole cost of converting the Anekere tank into a drinking-water reservoir, a work the completion of which it was expected would be accomplished in 1892. No sanitary estimate of towns and villages has been furnished, such as is given in nearly all the other sanitary reports. A description of all the towns and rural circles, and an examination of local disease causes, in connexion with the mortality from the chief diseases, should be the basis for building up sound sanitary progress.

6. *Sanitary Board.*—The Sanitary Board seems to have remained as it was before, consisting of the Commissioner, the Executive Engineer, and the Civil Surgeon. It held three meetings during the year. They were occupied in consultations. It was agreed, among other things, to draw up a few simple sanitary rules for the benefit of the coolies in the coffee plantations, and also that the rules for the better provision for sanitation in the Central Provinces are not suitable to Coorg.

18th July 1893.

No. 10.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Madras for 1891.

General Characteristics of the Year. Suggested Amalgamation of Diagrams.—This report supplies much valuable and detailed information, both as respects the sanitary condition of the people during the year, and also regarding the measures which were being taken to improve that condition. Moreover, the various questions involved are fully discussed in the orders of the Government of Madras. The general history of the year as regards health was unfavourable. Owing to the prevalence of cholera, smallpox, bowel complaints, and "all other causes," the mortality was higher than it had been for years. The rainfall was the lowest registered for many years, and as a consequence the principal food grains were dear. The facts for each district are very clearly set forth in a series of diagrams, which indicate the monthly rainfall and price of the main articles of food used by the people of that district, and these facts are given not only for the year under report, but also

for the two preceding years, as well as the average of the ten years previous. In the subsequent section of the Report, which deals with vital statistics, a similar series of diagrams is given to illustrate the births and deaths in each district, by means of which the results are shown in a striking way. Is it possible to give all these important facts, the rainfall, price of food, birth-rate, and death-rate of each district on one diagram? At present each district has three, one for rainfall, one for price of food, and one for birth and death rate combined. If the change we suggest could be effected, much would be gained, for, irrespective of the economy of space, and the economy of time now required to compare one diagram with another, the facts would be presented side by side in the most forcible manner. Although there are difficulties in carrying out this suggestion, they do not appear to be insuperable.

2. *Vital Statistics. Improvement of Registration.*—No change was made during the year in the system of registering births and deaths. We observe that the suggestion made in our Memorandum on the Report for 1889 had already been anticipated in the Madras Presidency since 1879. "All "deputy inspectors of vaccination," it is said, "are required to examine the birth and death registers "of any village or town they visit, and in their weekly diaries they report on the condition of the "registration of births and deaths as found on personal inspection." It would be of interest to have some illustrations of these diaries of the actual state of things found in a few towns and villages—how far the registers were borne out by the information otherwise obtained, whether any fictitious entries were discovered in the registers, or merely errors of omission arising from neglect, all which information is of importance as showing how far the statistics are to be accepted as fairly accurate. From the Vaccination Report for 1891–92, there seem to be 57 deputy inspectors of vaccination, generally two or three in each district, so that the aid they can render in this matter of registration is considerable, while at the same time the information they obtain regarding births, and deaths from smallpox has a direct bearing on their own immediate work. Inspection of the registers of vital statistics no doubt forms part of the district medical and sanitary officer's duties in visiting towns and villages, to which reference is made, paragraph 84 of this Report. Here also a few examples of the results would serve to show how the system works, what are the main difficulties to be encountered, and how they can best be overcome.

3. *Births. The Census of* 1891.—It is disappointing to find that the statistics of 1891 are still based on the Census of 1881. Nearly all the other provinces have employed the census figures of 1891. As the year of the census employed becomes more distant, the ratios based on it become more inaccurate. But even after making due allowance for this, there is evidence of improvement in the registration of births. There has been a steady rise in the rate, which stood for 1891 at 32·4 per 1,000, and, notwithstanding the heavy mortality of the year, the births exceeded the deaths by 6·2 per 1,000; of the 22 districts there are only seven in which the rate was under 30 per 1,000. The excess of deaths over births in the town of Madras to the extent of 14·7 per 1,000 is remarkable, and is attributed to the prevalence of cholera, fevers and bowel complaints. Excess of deaths frequently seems to be due to neglect of birth registration, but Madras, in 1891, heads the list of births with a ratio of 44·7 per 1,000. The mere addition of such a large proportion of infants to the population during the year conduces largely to a heavy death-rate. The Sanitary Commissioner has not discussed the effect of age on the district rates, but there is sufficient evidence in Statements I. and IV. of the Appendix to show that the excess mortality was greatly due to the deaths among young children. A diagram has been added to this Report, similar to the one which has been employed for some years in the Bombay Report, in order to give the birth-rate in each registration circle of the Madras Presidency, and as these are ranged by concentric circles, it is easy at once to see those localities where the rate is large, and those other localities in which it is small. In some districts examples are to be found of great variations, while in others the extremes are less marked. By the aid of this diagram the local and all other authorities concerned can see at once the places where the registration seems to be faulty. The eight circles which returned births below 20 per 1,000, and the 60 others in which the rate was under 30, all suggest the need for local inquiry.

4. *Deaths.*—During 1891, 747,553 deaths were registered, or the equivalent of 26·2 deaths in every 1,000 of the population, the highest mortality recorded since 1878. Cholera, smallpox, bowel complaints, and "all other causes," as already mentioned, largely contributed to this result. On the other hand, fevers were somewhat less fatal than in the previous year. The excess of male over female mortality, 27·1, compared with 25·3, is much in the same proportion as in most of the other provinces. One of the most striking features of the year is the unusual distribution of the mortality by months. In the first half of 1891 there was no great change from the experience of former years. The ratios for January, February, March, April, May, and June, present no great or constant increase over the ratios of 1890, or over the average of the previous ten years, but from July onwards there is a decided and steady increase, until in December the mortality stands at 3·4 compared with 2·1 in 1890, and 2·2 the average of the preceding decade. A circular diagram, similar in design to that already mentioned in connection with birth registration, is given to show the death-rate recorded in each registration circle of the Madras Presidency; of these registration circles there are 238. Here great variations are naturally to be expected, and nothing would be more unwise than to look for uniformity, or even an approach to uniformity. Much must depend on seasons and local conditions, and the aim of sanitary administration is to discover how far these last are responsible for the results, and how they can be improved so as to reduce the amount of sickness and death. The diagram is of great practical use, because it shows the mortality circle by circle in each district, and by the manner of its arrangement calls attention to the great variations presented by the circles even in the same district.

5. *History of the Chief Diseases: Cholera.*—During the year nearly 100,000 deaths from cholera were registered throughout the Presidency of Madras, yielding a ratio of 3·5 per 1,000. In 1877 the deaths ascribed to cholera equalled 12·2 per 1,000, but this ratio was altogether exceptional, and due no doubt in great measure to the famine of that year. In the 13 years which have elapsed since 1877 the cholera mortality has never exceeded 2·7, and on several occasions has been under ·5. The cholera mortality of 1891 was thus very heavy as compared with that of other years; one noteworthy feature in it is the unusual severity of the disease in the months of July, August, and September, when, as a rule, the deaths from this cause are comparatively few. In August over sixteen thousand cholera deaths were recorded, the highest number in any one of the previous nine years having been very little over seven thousand, or less than half the figure for August 1891. In six of the 22 districts the mortality for the year exceeded 5 per 1,000. In the district of South Arcot, it reached the maximum of 8·8. The August severity of the epidemic was most marked in Cuddapah Kistna, Kurnool, and North Arcot. In several of the towns the loss of life was heavy A list of 26 is given, in each of which the deaths from cholera exceeded 5 per 1,000, and in seven of these it exceeded 10, the maximum of 21·9 having been obtained by the town of Palni, in the district of Madura. In most of these 26 towns the water supply and drainage are reported to be very defective. The experience of 1891 throws no new light on the cause of the disease, but confirms the practical conclusion so often expressed that "its spread in a place depends largely on the sanitary "conditions present, and the very inferior water supply. In consequence of deficient rainfall in "1891, many of the tanks and wells, which were drinking-water supplies, became dry, and people "had to use any water they could obtain. Further, owing to the drought, the water in the tanks "and wells was much reduced in quantity, and therefore had a much larger percentage of dissolved and suspended impurities." The relative intensity of the epidemic is clearly shown in the map, but in conjunction with the general facts therein portrayed the figures given in Annual Statement VII. should also be considered. Even in those districts which are coloured darkest the disease was by no means spread over the whole area. Even in South Arcot, which suffered most, the number of villages which returned deaths from cholera was less than half of the total number in the district. Of the 238 circles of registration, 211 suffered, showing how wide was the distribution of the disease, and yet in only 8,975 out of 44,449 villages was its presence recorded, showing how much it was confined to particular spots over this wide area.

6. *Smallpox and Vaccination.*—41,322 persons died of smallpox during the year, or a proportion of 1·4 per 1,000—a higher ratio than that of any year since 1884, when it equalled 2·1. Of the total deaths in 1891, 15,593 were in children under twelve years of age. High as this number is, it is satisfactory to note that it represents a diminished proportion of mortality in children as compared with 1890. The increase of smallpox mortality in 1891 was by no means general over the Presidency; in one half of the districts it was lower than it had been in the year previous. The highest district death-rate was 5·3 in Kistna. A special table is given in paragraph 43 to show the smallpox mortality in each of the 55 municipal towns during 1891, and also the ratio per 1,000 of successful vaccination in them. At Calicut there occurred the very high death-rate from smallpox of 20·4 per 1,000, but the next highest was only 8·7; with the exception of seven others none exceed 3 per 1,000, and many are represented only by fractions. The column concerning vaccinations, we conclude, refers to the results of one year only, and there does not seem to be any accord between the figures it contains and those relating to smallpox, for low vaccination rates and low smallpox rates frequently run together, while on the other hand, high smallpox rates and high vaccination rates are also found in company—a result which probably arises from the fact that activity on the part of smallpox as soon as it attracts attention leads to increased exertions on the part of the vaccination department. It is very important that the two sets of facts should be carefully considered, because if it cannot be shown that vaccination has diminished smallpox beyond all manner of doubt, there is little to be said in its favour; but in order to make evidence of this kind of much value, it must, as we have frequently urged, be taken for a series of years. This is a question which ought to be dealt with fully in every sanitary report. The record of increasing number of vaccinations, year after year, of the large proportion of success attained in them, and of the great number of persons, and especially young children, so protected, is very satisfactory, but it is not nearly so satisfactory as evidence of the unquestionable reduction of smallpox would be. We do not, by these observations, desire even to imply the smallest want of confidence in vaccination, or to question the good that has been done by it in the Madras Presidency, but it is clearly desirable, if for no other reason than to aid in overcoming the prejudices which still exist against vaccination, that the good it has done should be fully demonstrated. The separate Report for 1891-92 is very satisfactory as regards the number vaccinated, which is the highest ever attained, the measure of success, and the large number of children successfully operated on. The number of infants protected had risen to 210,652. There is still, however, much to be done to overtake the recorded births, which numbered 924,238 in 1891. The accuracy of the returns was verified in a large proportion of cases on actual inspection by the Deputy Inspectors of Vaccination.

7. *General Results.*—The other headings under which deaths are recorded do not call for any comments beyond those already made by the Sanitary Commissioner and the Government. We shall, however, reproduce in a succinct form the principal figures regarding both births and deaths in the Madras Presidency during 1891, as they show the magnitude of the sanitary considerations involved, and of the sanitary work to be done.

1891.

Population (according to the Census of 1881) - - -	30,835,771.
Births registered - - - -	924,238 = 32·4 per 1,000.

Causes of Death.	Number of Deaths registered.	Ratio of Deaths per 1,000 of Population.
Cholera	98,773	3·5
Smallpox	41,322	1·4
Fevers	247,029	8·6
Dysentery and diarrhœa	34,223	1·2
Injuries—Suicide	1,916	—
„ wounds and accidents	6,322	—
„ snake bite, or killed by wild animals	2,304	—
Total injuries	10,542	·4
All other causes	315,664	11·1
Total from all causes	747,553	26·2

8. *Sanitary Defects and Remedies.*—In his section on sanitary works, the Commissioner deals chiefly with minor matters such as the sinking and repairing of wells, the construction of latrines, and the improvement of village sites. The larger schemes of drainage and water supply which were either in progress or only under consideration are discussed in the separate Report by the Sanitary Engineer. Towards general cleanliness some progress had been made, but in this important matter places vary greatly. "In some towns the conservancy arrangements were well looked after, but in "others they were very indifferently attended to." The information concerning local conditions and improvements is abstracted in three statements; one for municipalities, one for local fund circles, and one for registration circle villages. For the first two, the condition of the water supply, drainage, and conservancy in each is briefly described, the death-rate of the year is given, there are a few remarks on the general health, and a separate column shows the minor sanitary works that were executed during the year. The abstract for registration circle villages is on the same general model, but omits the important item of the death-rate, which might be added with advantage in future reports. In order to be complete, moreover, the column headed "Sanitary works" should include not only the minor improvements noted by the Sanitary Commissioner, but also more complete information regarding the major works which form the subject of the Sanitary Engineer's Report. For practical administration it is necessary that the existing evils should be clearly shown, as evidenced, not only by description, but also by the death-rate, and at the same time that all the measures which are being taken to remedy these evils should be fully stated In the matter of inspections the department was very active; every one of the 55 municipalities was inspected either by the Sanitary Commissioner or his Deputy, and 117 other places besides. There is every reason to believe that such careful visits as are described, in which the attention of the native gentlemen of each locality is drawn to prominent defects, and to the great importance of remedying them, must be attended with good results.

9. *Sanitary Engineer's Report.*—The year's engineering work, although less than was anticipated, forms a very gratifying commencement. The Sanitary Engineer remarks that "there has been "greater activity displayed and greater anxiety evinced by councils in regard to speedy improvement "in water supply or drainage than at any period since the introduction of local self-government, and "if only those schemes now under preparation, in addition to those already sanctioned, are carried "out within a reasonable period, few of the provinces of India will be able to show such a stride in "sanitary progress." In order to meet growing demands for the services of the Department and to provide proper supervision, the appointment of three Assistant Engineers was sanctioned, "each to be "in charge of a circle with the executive control of all works under execution, and all surveys in "progress within that circle." Of the 55 municipalities, 33 were inspected by the Sanitary Engineer during the year, and 17 by the Assistant Sanitary Engineer; and in the Report a short summary is given to show what has been the outcome of these visits, what surveys have been made, what schemes prepared, and what work actually done. Regarding the great majority of them there is some action to be reported during the year. In 22 of them surveys had been made and levels taken for water supply or drainage, or both combined; and for 17 of these, schemes were being prepared. For 11 other places schemes for water supply or drainage had been completed and submitted to the Government. Of these 11, all but one, which was still under reference, had been sanctioned. At Kumbakonum, Kandal, and Conoor, some progress had been made in the works, and at other places preliminary arrangements were being matured for commencing them. In addition to all these, the Sanitary Engineer had submitted special reports on the effect of the Dougal-Cheruvu (a large tank) on the health of Cuddapah, on the water supplies of the Coimbatore and Trichinopoly jails, and on the proposed improvement of the River Cooum. The record altogether is one not only of valuable work being put in train, and also to some extent actually commenced during the year, but is, moreover, one of great promise for the future.

10. *The Sanitary Board.*—No change has been made in the constitution of the Provincial Sanitary Board, which consisted, as before, of two members, the Sanitary Commissioner and the Sanitary Engineer, nor was there any change in the rules under which their work was to be carried on. In respect of their annual conjoint Report which was to form Part III. of the Sanitary Report of the year, the Government has directed that this conjoint Report is not required, and that it is sufficient to have the Sanitary Report submitted in two parts as has been done with this Report for 1891, the first being signed by the Sanitary Commissioner and the second by the Sanitary Engineer.

18th July 1893.

No. 11.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Bombay for 1891.

1. *General Results as regards the Public Health.*—Compared with 1890 the year was unhealthy. The total number of deaths registered was 513,132, whereas in 1890 the number had been 463,616. The deaths of 1891 thus exceeded those of 1890 by 49,516. The causes to which the deaths in the two years are attributed are contrasted in the following statement:—

Causes of Deaths.	1890.		1891.	
	Number of Deaths.	Ratio per 1,000.	Number of Deaths.	Ratio per 1,000.
Cholera - - - - -	3,259	0·20	17,850	0·95
Smallpox - - - - -	2,877	0·17	1,491	0·08
Fevers - - - - -	344,897	20·96	368,913	19·60
Dysentery and diarrhœa - - -	36,037	2·19	37,728	2·00
Injuries - - - -	5,883	0·36	5,887	0·31
Other causes - - - -	70,663	4·30	81,263	4·32
Total - - - -	463,616	28·18	513,132	27·26

Under every head excepting smallpox there was an increase in actual numbers especially under cholera and fevers. The death-rates, however, are somewhat lower for 1891, not only as a whole, but also under nearly every head, because these rates are calculated on the increased population given by the Census of 1891, whereas those for 1890 are calculated on the Census of 1881. It is not possible to avoid such discrepancies, which must inevitably arise when the results in the earlier years of a new census are compared with those in the later years of the previous decade. A certain annual increment to the population might be assumed, as is done in England, but even in England such assumptions have not always proved correct, and in India they would probably lead to errors as great as those they were intended to obviate. In dealing with the actual numbers, however, all such source of fallacy is avoided, and there is ample evidence in these figures to show that the year 1891 was decidedly more unhealthy than the year 1890. It would appear, however, that this difference in the character of the two years was not general over the Bombay Presidency, but was confined almost entirely to the Western and Central Registration Divisions. These two alone account for almost the whole excess of 49,516 deaths. In the other three registration divisions the number of deaths in each of the two years was almost identical. If we examine the figures more in detail, we find that in every one of the ten districts which compose these two registration divisions, with the single exception of Satara, the deaths of 1891 exceeded those of 1890. In his remarks on the rainfall, the Sanitary Commissioner has shown that in thirteen districts the amount was less than in 1890. This deficiency was most marked in the districts of Ahmednagar, Poona, Bijapur, Kanara, and Ratnagiri. Several of these are districts in which there was the most decided increase of mortality in 1891, but the meteorological data are somewhat scanty. A more extended comparison is desirable. It is not sufficient to take only two years and place the results in them side by side. It is only by taking the results over a series of years, year by year, and comparing the registered mortality in each of them, that sufficient data can be obtained for forming conclusions. As regards food, it appears that in thirteen districts prices were higher than in the year previous.

2. *Statistics in relation to the Census.*—As already mentioned, the statistics of both births and deaths are based on the new census. This Census was taken on the night of the 26th February 1891, and gave the population as 18,857,044, or an increase of 2,402,630 on the census taken on the 17th February 1881. Of these 18,857,044, however, 636,698 were Europeans or Eurasians, so that the Native population with which the annual statistics have to do stood at 18,820,346. A more detailed comparison of the results of the two censuses, district by district, would have been of interest, and also an examination of the totals of the Census of 1891, in both districts and large towns, compared with what the figures would have been if the number of births registered during the previous ten years had been added to the population of 1881, less the number of deaths reported during this same period. Independent of the European troops, the statistics of which are otherwise provided for, there is a large class of Europeans and Eurasians in all parts of India, regarding whom no sanitary information is now obtained. In the Bombay Presidency they number over 600,000, and it is very desirable that some means should, if possible, be devised for recording all the births and deaths that occur among them.

3. *Registration of Births.*—No change seems to have been introduced into the system under which births and deaths are registered. In our memorandum on the Bombay Report for 1890, we drew attention to the advantages to be derived from the inspection of the registers and a comparison of the entries they contain with information regarding such occurrences which can be gathered on the spot, and we need only refer here to what was said on this subject in the memorandum. A few illustrations of the detailed results of such inspections would add much to the interest of the section

devoted to vital statistics, and would at the same time serve to show what amount of dependence is to be placed on the records. This section of the Report, as usual, contains a very full and careful analysis of the figures for the year as regards both births and deaths. Although the recorded births numbered 41,562 more than in 1890, the ratio, being calculated on the larger population of the new census, is smaller, 36·27 compared with 38·97. The average for the province as a whole is composed of extremes, varying from 18 in the city of Bombay, and 22 in the Hyderabad district, to 45 in the district of Ahmednagar. Special attention is called to the low birth-rate in the city of Bombay. In this respect it stands fifth from the bottom of the list of the 56 towns of the Presidency, but, as has been frequently pointed out, regard in this matter must be had to the proportion of males and females in the population, and from this point of view Bombay presents a remarkable contrast to other parts of the country. In paragraph 3 the male and female population are shown for each collectorate according to the new census, and from this it appears that, while in other collectorates the number of the two sexes more or less approximates, in the city of Bombay there is a remarkable divergence, for out of a total of 806,144, 507,681 were males and only 298,463 females. It is a defect in the standard statements that the population of each district is not distinguished by sex, and it is certainly very desirable that, in discussing the statistics of towns or other well defined areas, this important element should not be left out of account. The proportion of male to female births throughout the Presidency is high (108 to 100). It will be observed that this provincial average is the outcome of extremes, varying from 103 to 131. In all the Sind districts the excess of male births is very marked. This is one of the many evidences of error in the registration records of this part of the province. The difference in the birth-rates of urban and rural areas is remarkable, and points to serious imperfections. The general result is a ratio of 28 for the one, and 37 for the other. Excepting Sind, all but three of the districts show an excess of births in rural tracts, and in some especially noted by the Sanitary Commissioner, the excess is very large, as, for example, in Nasik, the most marked of all, where the births in towns was 25, and in the country 43 per 1,000. In addition to noting these remarkable discrepancies, it were well that some local inquiry were instituted in order to discover the cause, whether they are the result of errors and omissions in the primary registers, or whether they are to be accounted for by some abnormal distribution of the sexes or other causes. The very high birth-rate returned by certain towns is another point in which further inquiry might be made with advantage. In 16 out of the 56 it exceeded 40 per 1,000.

4. *Deaths.*—The statistics of deaths have already been referred to in the general results of the year, and they have been very fully discussed by the Sanitary Commissioner, both as regards the causes to which they were ascribed, and their distribution according to localities. The district rates varied between 42 in Broach and 14 in the Upper Sind frontier; in the towns there are the extremes of 64 in the one at the top of the list, and 10 in the one at the bottom. It is worthy of notice that while the birth-rate in rural circles so much exceeded that of towns, 37 compared with 28, the death-rate occupies the reverse position, and was 29 in towns compared with 26 in the country. It is difficult to say how far this last result may be due to the greater salubrity of the country, but, however this may be, it seems very improbable that the figures concerning births represent the actual facts. In other provinces the higher ratios obtained from rural areas have been explained on the ground that such occurrences are much more likely to be known in the country than they are in towns. The community is small, and all the events of every-day life are talked about so as to become easily cognizable by those whose duty it is to record them. Births, therefore, which often escape notice in towns are recorded in villages; on the other hand deaths are not easily concealed in either. Such an explanation would account for the fact that there is not that great divergence between the death-rates of the town and country areas in the Bombay Presidency as there is between the birth-rates, but the object in view is not so much to account for the suspected error as to rectify it in the future. For this purpose nothing could be better designed than the detailed statements which the Sanitary Commissioner has furnished, showing in every district each registration circle separately, its area, population, number of villages it contains, the births, the birth-rate, the deaths, the death-rate, and the proportion due to each of the chief diseases. By this means it can be seen at a glance how enormously even neighbouring places vary, and the materials are at once available for local investigation as to the accuracy of the statistics, or, in the event of there being no good reason to doubt their accuracy, as to the local causes by which the great divergence in results is to be explained. To take the district of Khandesh by way of example, each of the 26 registration circles into which it was divided (22 rural and 4 urban) is shown separately, and the results compared with other years. The record is valuable, not only for the purposes already indicated, but also because it shows very clearly the distribution of the principal diseases.

6. *History of the Chief Diseases: Cholera.*—The main facts regarding cholera during the year are that the disease was much more prevalent than it had been in 1890, the number of deaths recorded having risen from 3,260 to 17,850; that the disease was widely distributed, having appeared more or less in 18 out of the 24 districts, but that it was severe in only four, which lie contiguous, Bijapur Sholapur, Poona, and Ahmenagar, in which the mortality varied from 6 to 2 per 1,000; that in few of the others did it much exceed 1 per 1,000, having been much less in many, and almost entirely absent from Sind; and that, although the extent of its distribution is still further indicated by the fact that 144 out of 285 registration circles returned fatal cases, the number of villages affected was very small, only 1,600 out of a total of 25,206. The main facts of distribution are shown on the map, but we would suggest that the colours employed to differentiate the various degrees of epidemic prevalence should be more distinct. At present they are so nearly of the same shade that their individuality is lost. The maximum cholera mortality in any locality was in the Bijapur rural circle, where it equalled 9·88 per 1,000; the nearest approach to this was 9·34 in the Jamkhed rural circle of

Ahmednagar; of the towns, Phandharpur, in the district of Sholapur, recorded the highest mortality from cholera, 5·86.

6. *Smallpox and Vaccination.*—The history of smallpox in the Bombay Presidency exhibits as usual very marked fluctuations. During the last 12 years the deaths ascribed to this disease have varied from 539 in 1881 to 14,438 in 1884. In 1891 the number was 1,491, or about half of what it had been in the year previous. It is interesting to observe that the decrease was very general. In every district, with four exceptions, the number of deaths from smallpox in 1891 was less than it had been in 1890. The highest mortality in any district was ·24 in Khandesh, and among the towns entered in Statement VI. the highest was 1·69 in Nandurbar, in that district. Of the deaths from smallpox in 1891, 27·50 per cent. occurred in infants under 1 year, 50·17 in children between 1 and 12, and the remaining 22·33 in persons over 12. The separate Vaccination Report for 1891–92 shows much excellent work during that year. The total record includes 830,873 vaccinations, and 62,274 re-vaccinations, with a percentage of success of 94·8 in the one, and 61·9 in the other. In the Bombay Presidency, exclusive of the Native States, the Sanitary Commissioner calculates that of 568,845 infants under 1 year who were available, 435,608 were protected during the year by successful vaccination, or a percentage of 76·58. This is a very satisfactory result, which has, moreover, to a very large extent been verified by actual inspection As we have frequently observed, however, the real test of the efficiency of vaccination is its power to protect the population from smallpox, and this can only be applied by careful statistics of the disease over a series of years, taken in conjunction with the statistics of vaccination during the same period.

7. *Fevers, &c.*—The other main heads under which the deaths are recorded call for little comment. The deaths ascribed to fevers were very numerous, more so than in any one of the previous twelve years, and another unusual feature in their history is that the maximum monthly total took place in December. Both these results are explained in the main by a severe epidemic of influenza. More particulars of the epidemic would have been of much interest, especially as regards the areas affected, and the time during which the disease lasted. In the Gujerat registration district, in parts of which it appears to have been most marked, the Deputy Sanitary Commissioner reported that this epidemic wave occurred in the months of March and April 1890, that it recurred in November and December 1891, and continued in January 1892. The district fever mortality varies enormously, from 37 in Broach to 8 in the city of Bombay. In one town of the Ahmedabad district (Vizamgam) the maximum 53 was reached. The total deaths from dysentery and diarrhœa do not show any stricking departure from that of other years, but the range in the district ratios is great, between 4·22 in Kandesh and 0.04 in Hyderabad.

8. *Sanitary Defects.*—In the "sanitary estimate of towns and villages" which forms one of the appendices of the Report, certain local defects are noted, and further information on the same subject is given in Section X. concerning a number of places which were inspected by the Sanitary Commissioner during the year. In both, however, the facts relating to the prevalence of disease might, with great advantage, be brought into more immediate juxtaposition with the facts relating to the conditions of the locality. The great object of collecting the records of births and deaths is that they may form the basis of local inquiry—what diseases, if any, have been prevalent, what local conditions cause or favour these diseases, and by what means may these disease causes be best removed? In the "Sanitary Estimate" many illustrations appear of evils, some of which at least might be mitigated by greater care. In several places the water-supply is scanty. In many instances, while the source of supply is noted, nothing is said of the water, or of how far it is apt to be polluted. In some of the circles "Howds" and "Ads" and "Vav" are spoken of as the sources of supply. These are probably abbreviations, but we have been unable to find out what they mean. In some places the water is described as "not good," in others as "brackish," in many the wells are unprotected and without proper arrangements for draining off the waste water; at Broach the water is said to be "bad," at Dohad "impure and unfit." Under the heads of drainage and conservancy, also, there is much to be done; the want of proper drainage is a frequent complaint, either there is none at all, or the system is imperfect. In not a few places the water sinks into the back yards. Surface cleanliness seems to be much neglected, and in many places there is no conservancy establishment. The "Sanitary Estimate" from which these extracts have been taken is a summary of the remarks made on their inspections by the Deputy Sanitary Commissioners, and by the Civil Surgeons. We observe similar differences in the amount of this inspection work done in 1891 to those commented on last year; one Deputy Sanitary Commissioner inspected 146 towns and villages, while another inspected only ten. The Civil Surgeon of Surat inspected ten towns, while some of the other Civil Surgeons only inspected one. There seems to be no good reason why all these officers should not afford valuable and extensive aid in this most important work directed to further sanitary improvements.

9. *Sanitary Commissioner's Inspection Notes.*—The condition of the towns visited by the Sanitary Commissioner in the course of his annual tour, and described in the *resumé* which he gives of his inspection notes, exhibits a very unsatisfactory state of things. In many of them there was no advance since the date of the previous inspection, and in nearly all grave evils still existed which must exercise the most deleterious influence on the health of the inhabitants. At Poona, for want of free flushing, the sewage in the old covered gutters and drains stagnates and pollutes the soil and air. At Manmad the sanitary condition of the place is described as "most unsatisfactory"; the river from which drinking water is chiefly obtained is fouled in every possible manner above the town. The state of the latrines is a standing menace to the health of the inhabitants. There is no filth cart, and surface cleanliness is neglected. "The town of Malegaon is without a public latrine

" or night-soil cart. The drinking water in the river and canal above the town is freely polluted in " every possible manner by man and beast. The whole place was indescribably filthy." At Nasik the river from which the great majority of the inhabitants draw their water supply is as much fouled as ever by the drainage of the town, which overflows from cesspits on both banks. The sanitary condition of Rander is described as " grossly neglected." At Surat " no progress in sanitary matters to " be reported. The most pressing need is drainage to carry off the contents of private privies and " cesspools, which overflow into the streets." Of Anand it is said " the most pressing need of this very " dirty and crowded town is the protection of the two tanks from human ordure and manure heaps, " by raising the parapets where they exist and throwing an earthen dam round them to intercept " filth. The banks of the tanks are at present used as latrines, and consequently are in a most foul " condition." At Ahmedabad the conservancy arrangements are " unsatisfactory." The Sanitary Commissioner speaks of " the foul and offensive condition of the surface in and around the town of Broach." At Sholapur, " the gutters were choked in many places with waste water and sullage stagnat- " ing and stinking in the most crowded parts of the town." Many of the towns in which these and the like evils are described are large and populous places of importance, with a considerable municipal income. In the orders of the Government, the attention of Collectors and Presidents of municipalities has been drawn to the great defects noted in the Sanitary Commissioner's inspection reports. The illustrations above given are merely samples of what may be found more or less in nearly every one of these reports The great aim of sanitary administration is to remove such evils, and we trust that a decided effort will be made to deal with them.

10. *Sanitary works.*—The section devoted to sanitary works executed during the year merely refers to Appendices III. and IV., in which all the information on this important matter has been tabulated. Appendix III. is concerned with military works only, and any reference to them may be postponed until we have to consider the Report of the Sanitary Commissioner with the Government of India which has to do with the wants of the troops in all the three Presidencies. In Appendix IV., the first part of which is devoted to municipalities and the second to local funds, the last column is designed to include new works. In this a number of minor improvements are mentioned, and in some few it is noted that schemes of drainage and water supply were under consideration, but the only scheme of any magnitude which seems to have been actually executed during the year was the new waterworks at Ahmedabad, which were formally opened on the 11th June 1891.

11. *Sanitary Board.*—One most important step has been taken, and that is the appointment of a Sanitary Engineer. The orders on this subject did not, however, issue till January 1892, and there are thus no proceedings of the Sanitary Board to be chronicled for 1891. The Board, it appears, is composed of two officers, the Sanitary Commissioner and the Sanitary Engineer.

18th July 1893.

No. 12.

Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of the Hyderabad Assigned Districts for 1891.

The Year generally Unhealthy throughout the Province.—In the Hyderabad Assigned Districts during 1891 the public health was considerably worse than it had been in 1890. Not only were the total deaths more numerous, but, with the single exception of smallpox, there was an increase under every one of the great heads according to which they were registered. The figures for the two years stand thus :—

	1890.	1891.
Cholera	847	7,958
Smallpox	324	34
Fevers	47,894	49,850
Dysentery and Diarrhœa	13,328	22,007
Injuries	1,004	1,090
All other causes	29,623	34,619
Total	93,020	115,558

These results are not to be ascribed to exceptional sickness in particular parts of the province. They were general. In every district the mortality was higher in 1891 than in 1890, and the same remark applies to almost every one of the 33 towns for which separate statistics are given. There is thus ample evidence to show that throughout the province some great general causes were at work during 1891 which rendered that year more unhealthy than 1890. What these causes were does not appear. The question is one of great difficulty; but as we remarked in noting on the Report for 1890, it is very desirable that the facts as respects meteorology, the supply of food, and any other change in general conditions should be carefully recorded year after year in the hope that they may eventually form the basis for arriving at some sound conclusions.

2. *Steps for Improvement of Registration.*—As we have frequently observed, one most valuable means of improving the registration of both births and deaths is constant examination of the registers, not only by the Sanitary Commissioner and his subordinates, but also by all other officials on their tours. In Berar considerable progress has been made in this direction. The Civil Surgeons and Superintendents of Vaccination inspected and tested a large number of registers, while the similar inspections by district officers and police officers not only tend in the same way to a more accurate keeping of the records, but must also impress on the people the importance which is attached by the Government to the correct keeping of them. Another important step towards improvement in this matter has been taken by making the *patels* in towns responsible for ascertaining and reporting all births and deaths occurring in their towns, and requiring further that these reports should be in writing, and not merely verbal as they had been previously. In towns registration has hitherto been more defective than in rural tracts, and it is hoped that under the new system distinct improvement may be seen. Some illustrations are given of the testing of the registers by the sanitary officials, but there is nothing to show how far similar inspections were made by the officers of the Revenue and Police Departments, or what results were obtained on such inspections. It is very desirable that such information should be given in future annual reports.

3. *The Census of* 1891 *in relation to Births and Deaths.*—The statistics of the births and deaths registered during 1891 are based on the Census of that year. The Census Report had not yet issued in full so that the Sanitary Commissioner was not able in this Report to discuss many questions concerning the births and deaths registered during the preceding 10 years which this Report will suggest. This we must look for in his Report for 1892. Meanwhile we can only note the general results that, according to the Census of 1891, the population of the Hyderabad Assigned Districts stood at 2,897,040, of whom 1,491,500 were males, and 1,405,540 females. The population increased during the 10 years by 224,367, or a proportion of 8·3 per cent., equivalent to ·8 per cent. in each year. According to the births and deaths which had been registered this increase would only have been ·5 per cent. per annum, but, as the Sanitary Commissioner observes, there are other factors to be taken into account, such as emigration and immigration, and a complete examination of the Returns can only be made when the Census Report has issued in full.

4. *Births.*—The births recorded during 1891 amounted to 121,755, compared with 111,450 in 1890. The increase of 10,305 affects the annual ratio very slightly, 42·8, compared with 42·5 per 1,000, because the rate for 1891 is based on the increased population shown by the new Census, whereas the rate for 1890 was based on the Census figures of 1881. The provincial rate of 42·8 per 1,000 for 1891 is the outcome of district rates ranging from a minimum of 34·8 in Wun to 47·6 in Akola, a difference which seems to be explicable only by inferring that in Wun the registration has been defective. Among the rural population the rate averaged 43·1, whereas in the towns it averaged only 40·5. In these towns, 33 of which are shown separately, the range is between 61 and 27. This fact alone is strong evidence of neglect in some of them, and the local testing of the registers showed that many births had been omitted. Special attention is drawn to such omissions in the case of three of the most important towns of the province, Amraoti, Akola, and Basim, which all returned birth-rates under 30 per 1,000, although they all have byelaws which make the registration of both births and deaths compulsory. In his orders on this Report the Resident has noted this unsatisfactory state of things and enjoined more careful supervision. It is worthy of notice that errors in the registers seem invariably to be errors of omission. The Sanitary Commissioner observes that "over-statement in the registering of domestic occurrences has never "yet been detected, though under-statement, especially in regard to births, is not unfrequently "met with." In paragraph 6 he has furnished a useful table to exhibit the maximum and minimum birth-rate in the rural circles of each taluk. There can be no doubt that such a statement is a valuable aid in examining the results, and shows at once, as in this instance, where further local investigation is required. In some of the taluks the range between the maximum and minimum birth-rate is very slight, but in others the results are very different. In four of the taluks the range exceeds 10 per 1,000, and in the Chandur taluk of Amraoti it rises to 36·9. According to sex the births of 1891 were in much the same proportion as in 1890, 106 males to every 100 females. Taken by districts the male figure varies between 102 and 109. It only remains to notice in regard to births that in spite of the unhealthiness of the year they outnumbered deaths by 2·2 per 1,000 of the population. This is the result for the province as a whole. Taken by districts, there is considerable variation. In one of them, Ellichpur, there was a slight excess of deaths, while in another, Akola, the births and deaths were almost equal in number.

5. *Deaths.*—The total deaths registered in the province in 1891 exceeded the number registered in 1890 by 22,538. The mortality even calculated on the increased population shown by the Census of 1891 amounted to 40·6 per 1,000, whereas in 1890 on a smaller population it equalled only 35·4. The district ratios in 1891 vary between 30 in Wun and 47 in Akola. There was only a fractional difference in the town as compared with the rural circles taken as a whole. A statement to show the maximum and minimum death-rates in the rural circles of each taluk, similar to that which the Sanitary Commissioner has given in regard to births, would be a valuable addition to future reports. The 33 towns of which the death statistics are separately shown present very marked differences between a minimum of 22 in Basim, and a maximum of 64 in Karanja. In this last town more than 14 per 1,000 deaths were due to cholera; but in others, where the total mortality was also very heavy, only a small part of it was due to cholera. In discussing the town mortality some particulars are given of their sanitary state, and to these we would draw special attention, because they afford excellent

illustrations of the great evils which are connected with high death-rates, and which have to be dealt with in order to prevent the excessive sickness and loss of life which are always going on in them to a greater or less extent. To commence with the town of Karanja, where, as we have just noted, the excessive mortality of 64 per 1,000 occurred in 1891. It is described as an old town, with a population of 14,436. The water supply is brackish, apparently due to a polluted soil; there is no system of drainage, and the latrines are on the well principle, so that the pollution of the soil must be becoming worse and worse. Next comes Talegaon, with a death-rate of 60 per 1,000, of which cholera contributed 11. Here it is reported that surface cleanliness is neglected, house drainage collects in cesspools, outskirts filthy, water brackish, denoting a polluted soil. In Kholapur, where the deaths equalled 54 per 1,000, fevers and bowel complaints were the prevailing forms of sickness. There are numerous well prives, the water supply is contaminated, and the subsoil damp; the water from the wells is so brackish that it is hardly fit to drink. Balapur, where the death-rate was 51, of which no less than 32 is recorded under *Fevers*, is said to be low-lying, surrounded on three sides by rivers which cause damp and give rise to fogs; there are many well prives. In all of the towns which are cited there are very grave sanitary defects which fully explain the great mortality. As was to be expected, with a high death-rate over the province, infants and young children suffered much. The mortality among infants under one year equalled 301 per 1,000, and among children between 1 and 5 it equalled 108.

6. *History of the Chief Diseases. Cholera.*—As has been already noted, cholera was much more prevalent in the Hyderabad Assigned Districts during 1891 than it had been in 1890, and caused 7,958 deaths in the one as compared with 847 in the other; but, great as is the contrast between these two years, the epidemic of 1891 was not nearly so severe as that of some former years. The statistics of 24 years show that, in six of them, the deaths due to cholera exceeded the number recorded in 1891, the maximum of 34,306 having been reached in 1878. On the other hand, the province has frequently experienced much greater freedom from cholera than it did in 1890. In several of the 24 years in question the deaths were limited to one or two, and in 1873 not a single death was registered under this head. The epidemic of 1891 was widely diffused over the province. Every district suffered more or less, and yet in only 532 villages, out of a total of 5,655, were any fatal cases registered. There were no peculiar features in the history of the disease, which merely repeats former experience. It is noted, as the result of the investigations made regarding it, that "local insanitary conditions were generally assigned as the exciting or predisposing cause." No change seems to have been made in the cholera map, which altogether fails to show at a glance where the epidemic was severe, and where it was comparatively light. In former memoranda we have dwelt on the advantage of a map which should, year by year, clearly illustrate the main facts of cholera history as a valuable aid towards a clear apprehension of the facts. In connexion with the statistics of cholera the result of meteorological observations taken at Akola and Amraoti are tabulated, but there is nothing to show in what respect these differed, if they did differ, from the results of ordinary years. Further information regarding the incidence of cholera in 1891 may he gathered from the details given in Annual Form, No. VI., at the end of the Report, in which the death-rate from this cause is tabulated for districts and towns. It will be observed that the place in the whole province which suffered most severely was the town of Karanja, to which, and to its very insanitary condition, reference has already been made. In only two other towns, Telegaon, also already cited in illustration of insanitary conditions, and Hiwarkhed, did the cholera death-rate equal 10 per 1,000. In some of those, even with a considerable population, the number of cholera deaths was small.

7. *Smallpox and Vaccination.*—The history of smallpox during 1891 was very satisfactory. As already mentioned, this was the only great head under which the deaths in that year were fewer than in 1890, and the contrast between the two years in this respect is marked, for whereas there were 324 smallpox deaths in 1890 the number in 1891 was only 34. This is the smallest smallpox mortality which has ever been recorded in the province. The next smallest was 39 in 1880. The maximum 8,369 was recorded in 1872. The statistics bear evidence of the efficiency of vaccination, but, as we have pointed out in noting on several of the sanitary reports, the connexion between vaccination and smallpox is a matter which might be discussed with great advantage year after year as new evidence is available, care being taken to localize the facts regarding both as much as possible. The separate report on vaccination in the Hyderabad Assigned Districts during 1891–92 is a record of much good work done. The number of operations performed had largely increased, with a percentage of success of 95·2 in primary cases and 29·4 in re-vaccinations. The increase in the number of infants and young children successfully operated on is specially important. Out of every 100 persons successfully vaccinated, 82·7 were infants, 16 were children over 1 and under 6 years of age, and only 1·3 of other ages. These results are all the more satisfactory, because special care has been taken to verify them by inspection. Animal lymph was exclusively used during the year.

8. *Fevers.*—Reference has already been made to the increased number of deaths from fevers recorded in 1891, and to the heavy mortality ascribed to them in certain towns. Taking the province as a whole, the deaths under this head rose from 47,894 in 1890 to 49,850 in 1891, though, owing to the change in the population figures on which the ratios are calculated, the fever death-rate for 1891 appears as less than that of 1890, 17·5 compared with 18·2. The district ratios ranged between 11·9 in Basim and 21·3 in Wun. Referring to the figures for the previous 23 years we find that the loss of life from fevers in the Hyderabad Assigned Districts during 1891 exceeded that of every year since 1883, when it amounted to 53,593, the heaviest recorded, with the single exception of 1878, when it reached the maximum of 85,260. We find also that over this series of years the districts preserve much the same relative position in regard to deaths from fevers as they did in 1891, with Wun at the top and Basim at the bottom of the list. In 1890, owing to the epidemic of influenza, the monthly

maximum of deaths took place in April, but in 1891 there was no disturbing element, and the maximum occurred, as it generally does, in the autumn months. A comparison of the particular parts of districts which suffered most from fevers with those which suffered least would be useful. Some interesting details on this point are to be found in the sanitary estimate of villages given in paragraph 27. In the rural circles of the Amraoti district, for example, the fever death-rates range between 9 and 35 per 1,000, in those of Wun between 15 and 38, and in those of Bassim between 7 and 22. There is a discrepancy, we may observe in passing, between the number of circles contained in this sanitary estimate and the number of circles appearing in Tables VII., VIII., IX., and X. at the end. of the Report. In these the total is given as 121, whereas in the sanitary estimate the total is only 97. The two should exactly correspond. We would also suggest that in the estimate the places belonging to each district should be more clearly separated. As it is, they run on so that it is difficult to say what places belong to one district and which to another. Regarding the relation of fevers to localities, we can also study that portion of Table VI. which deals with towns. In many of the towns the death-rate ascribed to this cause was very heavy, such, for example, as 37 per 1,000 at Wadegaon, 33 at Jamod, 32 at Balapur, already noted in connexion with its insanitary condition, and 34 at Burrur.

9. *Dysentery and Diarrhœa.*—The large number of deaths from dysentery and diarrhœa is one of the most marked features of the year, for they amounted to 22,007, the highest figure since 1878, when it reached a maximum of 27,577. In regard to these diseases, also, a more complete examination of their localization would be valuable. In the towns there are remarkable variations under this head from a minimum of *nil* in Wadegaon to a maximum of 17 in Nandura, Pussad, and Kolapur. Doubtless some of those extremes, not only under dysentery and diarrhœa, but also under fevers and other heads, are to be ascribed to error. As the Sanitary Commissioner observes, such errors are unavoidable. An ignorant villager with whom it rests to name the cause of death is certain to make great mistakes. Marked and otherwise unaccountable discrepancies are specially to be found in the deaths ascribed to "Other causes." Under this head, as usual, the Returns for 1891 present extraordinary fluctuations, not only in the districts as a whole but also in the towns—the only localized areas for which they are given separately. In the Wun district the rate was only 4·8, whereas in the Amraoti district it was 14·6. In the town of Sonala, with a population of about 4,500, three persons are registered as having died of "Other causes," whereas in Pathrot, with much the same population, the number was 28, and in the next town, Sirasgaon, which contains only 1,000 more inhabitants, the number was 81. The fact is that, though it is desirable to keep up the few great divisions of common diseases to which deaths are due, little dependence is to be placed on the results which ought to be taken rather as a whole than in its component parts. If the people can only be taught to record the deaths, the main object will be gained, and greater accuracy as to the causes of the deaths may be left to be attained as more medical knowledge becomes available among them. We remarked to much the same effect in our memorandum on the Sanitary Report for 1890, and we recur to it chiefly with reference to what has been said on the subject by the Sanitary Commissioner in this Report for 1891. With his views on the subject we entirely agree. There can be no doubt that the mortuary registration has supplied very valuable information, but, considering the rude machinery with which it is worked, too much must not be expected from it.

10. *Sanitary Defects.*—Some account of the sanitary condition of towns and rural circles is given in the sanitary estimate which appears in paragraph 27, which also contains columns showing the death-rate during the year from smallpox, fevers, and dysentery and diarrhœa. Where the real causes of death are so imperfectly registered, it is important that the total death-rate should also be entered, for, as it is likely to be the most accurate, it is also the main fact to be considered in connection with local conditions. We have already suggested an improved form of this statement for general adoption, and have explained what items of information we recommend it should contain, as may be seen by reference to the last paragraph of our Memorandum on the Report of the Sanitary Commissioner with the Government of India for 1890. The sanitary estimate furnished in this Report of Hyderabad Assigned Districts for 1891 may be divided into two parts, the first including the towns and the second the rural circles, and as regards both many serious defects are brought to notice. To begin with, the 30 towns which are included in this statement, defective drainage is frequently mentioned. In many of them the water is described as "brackish." In many where the supply is drawn from wells, there are also pit privies and cesspools. Most of them are provided with a conservancy establishment of some kind, but in a few there is no conservancy at all. Many of the villages are low-lying and ill-drained; the water supply is frequently brackish and liable to pollution. With rare exceptions they have no conservancy establishment. The Sanitary Commissioner summarizes the results generally in a dreary picture of the sanitary condition of both towns and villages, and ends by saying: "The people are ignorant, apathetic, and filthy in their habits, and no general change is likely to be effected for the better without the element of enforced compliance under legal authority." In this view we do not agree. Progress is certainly slow, and this is, no doubt, disheartening, especially to those on the spot who are actively engaged in carrying out reforms, and who are anxious in their own day to see the fruits of their labours. But the experience of all countries is the same, that in sanitary affairs progress is slow, and that it takes long years before the public generally come to understand the value of such improvements. In Berar and elsewhere in India we doubt not that in time, as the people become better educated and more enlightened, they will be more earnest in their endeavours to improve the conditions under which they live, and remove, as far as possible, those great evils which everywhere exist more or less at present.

11. *Sanitary Works.*—Something has already been done. It is gratifying to learn that the municipalities during the year expended nearly half their income on sanitation, and that in rural circles

Rs. 1,57,618 were expended on the same object, being Rs. 37,997 more than in the year previous. Want of funds seems to be the great obstacle to progress, but, so far as funds are available, there is evidently every disposition to spend them in the way best calculated to improve the public health. The principal work of the year was the completion of the Baldana water supply, which has cost all together nearly Rs. 50,000. In addition to this the water supply of Amaraoti town was immensely improved by extending the catchment area, and a plan of supplying Akola with pure water has been commenced.

12. *Sanitary Boards.*—The working of the District Sanitary Boards during 1891 is not so favourably spoken of as in the Report for 1890. In the Report for 1890 the Sanitary Commissioner remarked the results had so far been "encouraging. Surface cleanliness of village sites is more "general, and the manure heaps, which formerly occupied any spare corner in the street or house "enclosures, are being gradually removed to the outskirts. Boundaries are demarcated generally by "posts, within which people are not permitted to answer the calls of nature. Wells are being "protected, where necessary, by parapets and prickly pear, and other cover removed round villages." All these are simple sanitary reforms, which involve little or no expense, and the execution of which is calculated greatly to improve the public health. But in his Report for 1891 the Sanitary Commissioner observes that "the results of the board's labours show that but little progress has been "made in regard to village sanitation. . . . . It is easy enough," he adds, "to demarcate limits, "&c., and to require village sanitary boards to instruct the people to observe those limits, but there is "no means of enforcing compliance, and, as a rule, no attention is paid to the board's instructions. I "was particularly disappointed during my recent tour to find so little improvement in surface "cleansing." On these points, we would draw attention to the following extract of the orders of the Local Government on this Report, in which we entirely concur. They apply, not only to sanitation in Berar, but also to the state of the question more or less in all the provinces of India. "The Resident "is not surprised that Dr. Little should be appalled by the magnitude of the task before him, or that "he should be discouraged by the comparative smallness of the year's outturn of actual work. Rural "sanitation is perhaps the most difficult, and certainly it is not the least important problem of modern "administration in India, and the Resident, therefore, is glad to be able to agree with Colonel "Mackenzie that, although local boards move slowly—and it is to be remembered that they have only "very recently come into operation in Berar—still greater care and attention is being given to sanitary "matters all along the line." It is added that, "If the existing provisions are not found sufficient, or "if they cannot be enforced, the Resident will be prepared to consider proposals for applying a sanitation "law to the province." Among improvements effected during the year, it is to be noted that better means for conserving the water supply have been taken at nine places where fairs are held. The sanitary survey of the province had been continued, and 100 towns and villages were added during the year to the places already included in it.

27th June 1893.

No. 13.

Memorandum by the Army Sanitary Commission on the Administration Report of the Commissioners of the Town of Calcutta for 1891-92.

1. *The Census of* 1891.—There is much that is of interest and importance in this Report, and especially in that portion of it which has been contributed by the Health Officer of the town, and with which we are chiefly concerned. He has stated the facts very clearly and concisely, and has given an excellent review, not only of the events of the year, but also of the recent sanitary history of Calcutta and its suburbs. In our last memorandum we referred to the main results of the Census of 1891, but as the figures as finally corrected have been somewhat altered, and as much additional information of interest has been added, we shall here refer to it again. The population of the municipal area, as extended three years previously, was found on the night of the 26th February 1891 to amount to a total of 681,560, of whom 446,746 were males, and 234,814 females. Thus, out of every 100 inhabitants 64·1 were males, and only 35·9 females. As the areas have been altered, no comparison can be made between these figures and those of the Census of 1881, but if the urban area alone be taken, that is to say, the old town, including the fort and port, the results are as follows :—

	Males.	Females.	Total.
1881	288,817	144,402	433,219
1891	316,667	149,793	466,460

Perhaps the most striking feature in them is, that while the population had increased by 33,241, only 5,391 of this increase were females. It is also noteworthy that the number of infants under one year had diminished.

2. *Analysis of the Ten Years' Statistics in Urban Calcutta.*—With so small a proportion of females, and with the paucity of females most marked at the child-bearing time of life, it is not surprising that the birth-rate in Calcutta has been small. The analysis of the 10-year statistics which Dr. Simpson has furnished is very instructive. Between 1881 and 1891 the deaths have so far exceeded the births that, if there had been no extraneous additions to the population, the Census of 1891, instead of showing an increase of some 30,000, would have shown a decrease of 40,000. Allowing a margin for emigration, which undoubtedly takes place to a considerable extent, it may be estimated that during the 10 years at least 100,000 immigrants must have come to the town. As the Health Officer remarks "Calcutta then owes its maintenance and increase of "population to immigrants. It is peopled at the expense of other parts of India and elsewhere."

3. *Excess Mortality among Females.*—Another remarkable fact which comes out very clearly in the analysis of these 10-years' statistics is the much greater mortality among females than among males. The average of the period is, for males 25·4, and for females 34·5. A similar result comes out not only for the town as a whole, but in each section taken separately. The rates vary greatly. In Shampooker, for example, the female rate is only about 2 per 1,000 above the male rate; in Bamun Bustee it is 16 above the male rate, but in every one of the sections the female rate is the higher of the two. In commenting on the Bombay Municipal Report for 1891 we have drawn attention to the high proportion of female compared to male deaths. In that year the Bombay rates were 23·99 for males, and 37·59 for females, rates which do not differ very largely from the 10-year averages of Calcutta above quoted. In Bombay the Health Officer attributes the excess among females in great measure to child-bearing, but, while admitting that this must have a certain influence, we have expressed doubts as to the adequacy of the explanation, and have recommended further inquiry. The Health Officer of Calcutta suggests another reason, and this is, that females when once they come to Calcutta become more permanent residents, and do not return to the country to die as many of the males do. As respects the movement of population, Calcutta and Bombay seem to have much in common, and to be far more subject to those immigrations and emigrations which have such a vast influence on the vital statistics than Madras, where the birth-rate is double that of either of the other two Presidency towns, and where, though the female mortality is higher than the male mortality, it is only slightly higher.

4. *The Ten-year Statistics in Relation to Sanitary Improvements.*—The Health Officer has discussed the constitution of the population in respect of age, and has shown how necessary it is to consider the statistics both of births and deaths in relation to this most important factor, but we must pass on the practical question, what evidence is there of progress during the 10 years, and how far have the improvements which have been effected influenced the health of the inhabitants? In order to answer this question, the results of the five years 1882 to 1886 are compared with those of the other five, 1887 to 1891, and it is observed that while the first quinquennium exhibits nine wards with a death-rate above 30, the second quinquennium exhibits only three wards with a death-rate above 30. It is said, moreover, that there is a general lowering of the death-rate in all the wards except four, while in seven of them the birth-rate has improved. Summing up the results, Dr. Simpson remarks: "On the whole, therefore, the latter quinquennium has been more healthy than "the earlier one of the decennium. There has been a lower death-rate, a higher birth-rate, fewer "deaths from all causes, and a large decrease in cholera. Much of the decrease in the death-rate, "especially from cholera, may be fairly attributed to the increase in the water supply and the "general improvements which have been carried out by the Commissioners during that period." The comparison would have been more complete and instructive if it had been carried further back, but this can easily be done by examining the figures for a number of years as they are given at page 23 of the Report, and this examination of a series of years, taken one by one, as we have frequently remarked, affords a much more exact, and therefore valuable, basis for comparing results than the averages of a number of years taken collectively. We confess that the figures are disappointing. The ratios are worked for the years 1865 to 1881 on the Census of 1881, and those for 1882 to 1891 on the Census of 1891, and are therefore too favourable to the earlier years of each period. For example, the death-rate of 1882, when the population was doubtless less than it became in 1891, by being calculated on the Census of 1891, is made to appear somewhat less than it ought to be, but taking the figures exactly as they are given, we do not see that marked evidence of improvement which we anticipated. The death-rate of 1891 (27·9) is higher than that of 1882 (27·1), or of any one of the intervening years. It is true that the Returns of the last 10 years as a whole present a favourable contrast to those between 1865 and 1891, but it is very remarkable that within this last-named period the five years 1869 to 1873 yielded better results than any other five years that can be found side by side in the whole statement. Again, it is quite true that the cholera deaths of 1891 (1,553) were less than the mean annual number between 1881 and 1890 (1,656), but if we turn to earlier years we find that in 1880 there were only 805, and in 1871 only 796. We thoroughly believe in the power of sanitary improvements to reduce sickness and mortality, and we are well aware what great efforts the Commissioners of Calcutta have made in this direction, but we must look the facts in the face, and when sickness and mortality are not diminished to the extent anticipated we must ask what disease causes have still to be removed?

5. *The Statistics of* 1891.—The registration of births and deaths in 1861 show a birth rate of 17·6 per 1,000, and a death-rate of 27·9. The manner in which both these rates were distributed in the different sections of the town is detailed in the statement given at page 22. The birth-rate varied from 3·4 in Waterloo Street to 30·4 in Hastings. Some of the more marked extremes are apparently to be accounted for by the varying disproportion between the sexes, but this will not

explain the extraordinary differences in the percentage of male to female births, which range from 10 in one ward to 133 in another, the average being 106. It is, however, impossible to reconcile the entries in the various columns of this statement as regards births. For example, in Fenwick Bazaar Street, where the percentage of male to female births is recorded at the above quoted minimum of 10, it is shown that of the total 298 births recorded the sexes were each represented by one-half—there were 149 male births, and 149 female births, and the same result is set forth in the columns which follow by an "annual ratio of births per 1,000 of population" of 5·2 in each. The percentage 10 would seem to be a misprint for 100, and the percentage 12·5 for Burra Bazar a misprint for 112·5. In the general ratio of mortality for 1891 (27·9) the sexes observe much the same relative position as that which has been already noted as the 10 years' averages, for the death-rate among males was 24·4, and among females 35·2, and similar experience is repeated in respect of every ward, Bamun Bustee showing the maximum excess of 17·6 per 1,000. The total death-rate by wards ranges between 14·9 and 45·4.

6. *The Statistics of* 1891 *in Suburban Calcutta.*—The statistics discussed in the preceding paragraphs concern only urban Calcutta—that is, Calcutta as it was before a portion of the suburbs were amalgamated with the town a few years ago. These amalgamated suburbs continue to be dealt with separately for statistical purposes. The details of both births and deaths within this area are summarized in a statement at page 71. The birth-rate averaged 19·6, fluctuating between 10 in one section and 36 in another. In most of the sections there is much less disparity between the sexes which compose the population of the suburbs than there is in those of the urban area. The percentage of male to female births averaged 110, but this proportion varied between 90 and 129. The mortality was high (39·4), and was higher among females than among males, 42·2 compared with 37·5, but the excess of female deaths is considerably less than the excess of female deaths already noted within the town proper.

7. *Statistics of* 1891 *in Calcutta as a whole.*—There are no statistical tables for Calcutta as a whole. The only figures given would seem to be those at the foot of page 9, where the general birth-rate is shown as 18·3 and the general death-rate as 31·5. It is, no doubt, very important to preserve the statistics of urban Calcutta separate for purposes of comparison with those of former years, but this might easily be done by keeping each statement in two divisions, one for urban and the other for suburban Calcutta, and then giving the general results for Calcutta as a whole in one line at the bottom. A more complete comparison between the vital statistics of the three Presidency towns would then be possible, and it would at the same time be much easier to examine the results in the different sections which make up the whole municipality of Calcutta itself.

8. *Smallpox and Vaccination.*—The various diseases to which the deaths of 1891 were attributed do not call for comment. To the prevalence of cholera in the early part of the year, and its supposed propagation by pilgrims to the Ardhodaya Jog, we have referred already at length in our Memorandum on the Calcutta Report for 1890, and on this subject we have no further remarks to make. Smallpox, which had been epidemic in the previous year, and caused 872 deaths, was represented by only 18 deaths in 1891. Vaccination continued to be actively carried on, though the number of operations performed fell far short of that in 1890, when the prevalence of smallpox induced many grown-up persons to be re-vaccinated and led also to children of very tender age being operated on. We observe, however, that the primary vaccinations of the year did not embrace one-half the births, which amounted to 12,477, while the primary vaccinations numbered only 5,224.

9. *Sanitary Defects.*—In spite of all the improvements which have been effected during recent years the sanitary condition of the town, in the Health Officer's opinion, is "still bad," and this opinion, as we have already shown, is too much in accordance with the facts, as set forth in the mortuary statistics. "Many parts of Calcutta," he says, "are as insanitary as they well could be." One great defect he dwells on is the want of fresh air in the badly ventilated quarters, and this he believes can be remedied by demolition, accompanied "by the enforcement of proper building laws and regulations "which are at present not in existence for Calcutta." Another great defect he notes is, that while an abundant supply of water is pumped into the town, owing to this supply being intermittent, and also to the insufficient number of standposts "inside the bustees, the inhabitants are in much the same "position as before the extension of the supply. They are only able to obtain water from the "stand-posts at a distance. They therefore either store a supply in vessels subject to contamination "or resort to their wells and tanks. The labouring class, who are most affected with cholera, go to "their work before the supply can be obtained from the pipes, and they return to their homes after "that supply has been stopped. The benefit they derive from the increased water supply is "accordingly small." A third great defect which Dr. Simpson insists on is that the sewers when flooded pollute the soil and subsoil water, and also that through the open man-holes they send forth offensive sewer gas into the atmosphere. This is the opinion which Mr. Baldwin Latham formed as the result of his inspection of the Calcutta drainage. In referring to this matter last year, we noted that this opinion was not shared by the Engineer of the Corporation, and we concurred in the view expressed by the Lieutenant-Governor that the leakage from the sewers had been too hastily assumed to be the cause of the great prevalence of fever in 1890, seeing that this prevalence had not been confined to the town of Calcutta but extended to the neighbouring parts of the country, and was really greater in some of the added suburban wards which had no sewers than in the town itself. But if it be a fact that the sewers do leak and allow sewage to permeate into the soil, there can be no question that the defect is most serious, and that steps should be taken to remedy it as soon as possible. There can be no doubt, as the Engineer remarks in his departmental portion of the Report,

that the level of the subsoil water in Calcutta has been materially reduced since the sewers were constructed, and that "the subsoil was permeated more or less with the filth of generations before they were constructed," but it is none the less necessary to remedy the evil if it still exists. The chairman of the municipality in his general report summarizes the whole question, and gives the result of his own personal observations. The conclusions which he has formed are as follows, and in their general application we entirely agree. "The actual facts thus established are, that the older sewers of "Calcutta do pollute the subsoil in their immediate neighbourhood, but the area of contamination "remains still to be determined. My observations did not go to show that the newer sewers do at all "pollute the subsoil, but on the contrary, the only two sewers laid within the last nine years, one "in 1883 and the other in 1886, that I examined, were found to be well laid and thoroughly "water-tight. I have also watched the laying of very many pipes for the last two years, and they "have all been properly jointed. All pipes that have been laid since Mr. Baldwin Latham wrote "his report have been jointed in the manner recommended by him. It seems to me that I should be "wanting in my duty if I did not here record my conviction that it will be henceforth the duty of "the Commissioners to set aside yearly a considerable sum of money till they have cemented all the "joints of all the old sewers. It has been objected that such a course would inevitably raise the "level of the subsoil water. That may be so or not. I have given considerable attention to the "point, and am by no means convinced that such would be the result. But whether the subsoil "water is raised or lowered thereby, there can be no doubt that the joints of the old sewers, like the "joints of the new, should be water-tight."

10. *Sanitary Works.*—During the year sanitary work continued to make good progress, both in the recently acquired suburbs and also in the town. On the former Rs. 851,071 were expended, a considerable part of which was devoted to the extension of the water supply and to drainage. Several bustees within this added area have also been taken up for improvement. Within the town itself this work of bustee improvement has been carried on with energy, and a better out-turn obtained than in any former year. Connections for filtered water to bustees which were formerly disallowed have now been allowed on certain scales which have been freely taken advantage of, and bustee owners have also had permission to erect covered reservoirs for filtered water, so that the defects consequent on the intermittent supply which we have noted in a previous paragraph may be obviated. Sixteen tanks were filled up during the year. Several structural improvements have been carried out in the streets, which have led to clearances and provided for better ventilation. An incinerator, for the disposal of refuse, on the most approved pattern, was on the point of completion. These, and other items that might be mentioned, are ample evidence of the energy which the Commissioners have brought to bear during the year on the works required for the improvement of the health of the town.

18th July 1893.

No. 14.

Memorandum by the Army Sanitary Commission on the Administration Report of the Madras Municipality for 1891–2.

Want of Uniform Plan in Presidential Reports.—We shall deal with the health portion of this Report under similar headings to those we have adopted in noting on the sanitary condition of the various provinces of India. The Health Officer of the municipality contributes a special account of the cholera epidemic of 1891, and this forms one of the appendices; but the general sanitary history of the year, including the results of registration of births and deaths, the mortality from different diseases, the defects in the condition of the various quarters of the town, and the measures which are being taken to remove them, are all dealt with in the President's general report. It would simplify matters very much if some general scheme of report were adopted for all the three Presidency towns, more especially as regards the statistical tables, which are now very voluminous, very various in design, and therefore very difficult of comparison. The uniformity which has been secured in the provincial sanitary reports has proved to be of great practical value, for it aids materially in finding information on any particular point and in understanding it when it has been found. We have referred to this matter before, and trust that the suggestion may be adopted.

2. *The Census of* 1891.—The Census of 1891 is employed as the basis of the statistics of the year, but very little is said of the results of that census, nor is it shown how far those results accord with the figures deduced from the birth and death registration during the intermediate years on the Census of 1881. It appears from the statistical tables in the appendix that the population of Madras on the 26th February 1891 numbered 452,518, and that it was composed as follows :—

Europeans, East Indians, and Native Christians	39,742
Hindus	358,997
Mahomedans	53,184
Others	595

From another table we learn that the sexes were very equally divided, there being a small excess of females. The exact numbers were, males, 225,817; females, 226,701; while as regards the children there were in the total population of 452,518, 13,667 infants under one year, and 41,016 children of one and under five years of age. In comparing the birth-rate and death-rate of the three Presidency towns the figures showing the compositions of the population in each are of great importance.

3. *Registration of Births.*—Great pains have evidently been taken to ensure a more accurate record of both births and deaths. Orders were issued that "every case of birth and death must be verified "and registered," and the result was that "in spite of the unusually large number of deaths during "the year there were only 26 unregistered cases against 411 in the previous year;" of these 26 unregistered cases in 1891, 22 were deaths and four were births. The constant inspection of the burial grounds must serve as an excellent check on the death records, but it is not clear what procedure was adopted as a check on the birth registration. So much pain, however, has been taken in order to obtain accurate data that we turn with more than ordinary interest to the statistics of the year. The live births numbered 18,061, or a ratio of 39·9 per 1,000. Among classes this ratio varied between 40·4 for Hindus, 38·9 for Mahomedans, and 37·3 for Europeans, East Indians, and Native Christians taken together. It seems a mistake, we may remark in passing, to join these three together, seeing that the differences between them are so marked. Even though the numbers are small, it would be better to take each separately. According to divisions the rate ranged between 34·2 and 46·5. In all but one of them the male births were in excess. In this case the male births were 96·6 to every 100 females. In the others they ranged from 102·3 to 123·1. Such variations in the provincial reports would be looked on as indicating neglected registration, but there is still much to be learnt regarding vital statistics in India.

4. *Registration of Deaths.*—The year was signalized by very heavy mortality, equalling 52·6 per 1,000. It affected all classes, reaching a maximum of 59·6 among Mahomedans. Among Hindus it was 52·5, and among Christians 44. It was also very general over the town, varying from 43·3 in the 5th division to 72·8 in the first. In the 5th division alone were the births more numerous than the deaths, and that to the extent of only ·5 per 1,000. Fevers, dysentery, diarrhœa, and cholera are the heads under which the mortality increased largely on that of the year previous. Another striking feature in the mortality is the enormous proportion that fell on the children. This is not unusual in Madras. Indeed, the rate for 1891 is considerably under that of some previous years; but it is still very high, amounting as it does to 427·5 for infants under one year and to 90·5 for children between one and five years of age. The excessive infant mortality of Madras is being inquired into by the Sanitary Commissioner. The variations in the ratios for the different quarters of the town afford a basis for such an investigation, for we observe that they run between 351 and 559 per 1,000 for infants under one year.

5. *Causes of High Mortality.*—Of the general causes at work in producing the high mortality of the year, one of the most prominent was the high price of food. The ordinary labourer in Madras has but little to spare even in the best of times, and in 1891 the purchasing power of the rupee was reduced by one quarter. Cholera and fever, to whatever cause or causes they may be primarily due, found a population ill fed, and, therefore, ill able to resist. As we have already seen in the Sanitary Report for Madras, unusual causes of disease and death were not confined to the town of Madras, but were widely spread over the Presidency. But in the town there were superadded or, at all events, intensified local conditions to which much of the death-rate must be ascribed. The remarks of the President of the municipality on the subject are so important that we shall quote them in full. "The great difficulty," he says, "in dealing with the problem of Madras sanitation lies in the fact that the "high death-rate is not the result of any one cause, but of a conjunction of nearly all the causes that "affect mortality all over the world. To enumerate them as shortly as possible, the more important "ones are an indifferent water supply, defective drainage, and over a considerable portion of the "municipality no drainage system at all, a porous soil loaded with organic impurity, a putrid and "fluctuating subsoil water rising comparatively near the surface, want of open spaces in some parts "of the town, crowded *parcherries* for the poor, overcrowded and ill-ventilated houses for the middle "class, in many cases directly connected with the subsoil water by wells in their interior, burial "grounds and slaughter-houses in the city, and, lastly, the general social conjugal and religious habits "and customs of the people. These are matters which can only be remedied by a heavy expenditure "of money and years of systematic and patient work."

6. *History of the Chief Diseases. Cholera.*—This disease was epidemic and caused 1,916 deaths—the largest number recorded since 1876 and 1877, which were years of famine. The statistics which the Health Officer furnishes in his special Report show that during the 10 years previous, the cholera mortality had varied from a minimum of 4 deaths in 1886 to a maximum of 1,193 in 1884. In 1891, as already stated, even this maximum was exceeded, and, coincident with considerable privation among the people, the deaths numbered 1,916. These fluctuations are very remarkable, but they are not particular to Madras, and are to be found more or less in every part of India. The Health Officer believes that the disease was imported into the town, and much of his Report is devoted to evidence under this head, and also to an account of the measures of isolation and disinfection which were adopted to check it. Much might be said on both these questions, but it will suffice to point out, as regards the first, how inadequate the incidents mentioned are to account for the facts. Not only was cholera present all over the town of Madras, as may be seen both by the statistics and the map, but it rose and fell in all the divisions of the town at or about the same time. Nor were the general epidemic causes

at work confined to the town of Madras. They embraced a much wider area, as may be seen by comparing the cholera deaths in Madras itself, and in the neighbouring districts in 1890, with those recorded in 1891. They stand thus:—

DEATHS REGISTERED FROM CHOLERA.

	1890.	1891.
Chingleput	410	4,985
North Arcot	2,304	7,355
Salem	2,548	5,896
South Arcot	2,043	16,096
Madras	744*	1,916*

That such great differences in the two years as occurred in these districts were dependent on some great general cause or causes operating over a wide area is manifest.

7. *Measures taken for the Prevention of Cholera.*—But the second point to which we have referred is the real practical question—What can be done to prevent cholera? The Health Officer describes what was done in Madras during 1891. The measures which he advocates, and which were, as far as practicable, carried into force, were the removal of the sick as soon as their cases were known, their isolation, disinfection of all articles that had come in contact with them, and even the burning of the huts they occupied when these were composed of inflammable materials. There is nothing to be gained by discussing this procedure from a purely theoretical point of view. The only practical way of dealing with it is to test it by the results. Was it successful? The reply must be that it was not, but that, on the contrary, these steps altogether failed to check the epidemic. It may be argued that, but for them, many more cases would have occurred, but there is no evidence on which to support such an assertion. On the contrary, we know that in spite of all these measures cholera added much more to the mortality of Madras during 1891 than it did in former years when no such measures were adopted. But if there be no evidence that the measures did good, there is ground for believing that, at least in India, the country with which we are now concerned, they have really done harm. Experience has shown that in India, the fear of being forcibly removed from their homes induces panic among the people, that it leads to concealment of the early symptoms which alone are amenable to treatment, and that the mere fatigue inseparable from removal is attended with great risk to the sick person. It is clear, from the Health Officer's own account, that the measures adopted were very unpopular, and that, in some instances, the sick had to be carried off by force in direct opposition to their own and to their friends' wishes. Such action is sure to be resented, and to set the people against everything done in the name of sanitation. The only real preventive to be adopted in Madras, as elsewhere, is to remove the many insanitary conditions in which, as may be seen from the remarks of the President of the municipality already quoted, the place abounds, to provide pure water, to cleanse the polluted subsoil, to establish a thoroughly efficient system of conservancy, and to improve the dwellings, especially of the poorer classes. These, no doubt, are great and costly objects for which time and money are required, but it is therefore all the more necessary that nothing should be wasted on measures which experience has proved can end only in failure.

8. *Smallpox and Vaccination.*—The work done by the vaccinators seems to have been very good and complete, for it appears to have included every infant available for operation. The Returns are for the year 1891-92, and show a total of 26,493 operations, of which 25,084 or 97·72 were successful. In primary cases the very high proportion 99·45 cases per 100 is recorded. It does not appear how far the results have been verified by inspecting officers. In paragraph 161 of the Report it is said that 24 deaths from smallpox occurred during the year, but in paragraph 170 the number is given as 66, and from the statistics in the appendices this last would seem to be the correct figure. According to either, the mortality was very small. There was no local outbreak of any importance. The largest number of deaths in any one quarter of the town was 25 in the first division out of a population of 71,587, and these were spread over 9 months out of the 12.

9. *Fevers.*—The mortality recorded under this head was very heavy, and equalled 15·6 per 1,000. The number of deaths from this cause rose from 4,685 in 1890 to 6,731 in 1891. There seems some doubt as to whether part at least of this mortality was not due to influenza, but if influenza had really been prevalent, it would almost certainly have shown itself among the European or other portion of the community where it would have been recognized. From the table given at page 52, it is shown that in 1891 not only were fevers much more fatal in Madras as a whole than any one of the preceding nine years, but that the same remark applies to each class taken separately. Among Christians the rate was 10·5 per 1,000, the previous ratios having varied between 3·7 and 8·6; among Hindus 14·8, previous ratios having varied between 7·5 and 10·4. Among Mahomedans the rate was 18·5, previous records having varied between 4·8 and 11·1. If the results for 1891 be taken by localities, the maximum mortality of 21·3 was reached in the first division, which it may be remarked leads the way under all the main headings, and the minimum of 12·6 in the fifth division.

* The figures for Madras do not agree with those in the Sanitary Commissioner's Report.

10. *Sanitary Defects.*—Of these some mention has already been made in a general way, but it is instructive to note more particularly what is said of each division of the town in connection with the mortality in it. The first division, which, as already noted, was the most unhealthy in 1891, and where the death-rate has attained the very high figure of 72·8, contains "some of the largest *parcherries* "in the municipality, with wretched huts huddled together, in some cases on a soil that, after a "shower of rain, forms a slough of liquid filth." The people are poorer and felt the high prices more acutely than in other parts; only a part of the division is drained, and that imperfectly, and the Red Hills water is obtainable there only in early morning. In the third division, which comes second, with a death-rate of 56·7, the main evils are overcrowding, contaminated soil, and putrid subsoil water. Of the fourth division, which stands next, with a death-rate of 51·4, parts are described as "low and "swampy, with pools of filthy stagnant water." It contains some filthy *parcherries*, has little drainage, and is very partially supplied with Red Hills water. Part of the population is very poor. In spite of overcrowding and smells, the seventh division returned the lowest mortality, 45·9, but even this is a very high rate. The information given regarding these local conditions is very valuable as the first step towards their improvement. It would make the facts of the case still more clear if the maps given at the commencement of the Report to indicate the incidence of cholera, were also employed year after year to show what parts of the town are drained, and also what parts are served by the Red Hills waterworks.

11. *Sanitary Works.*—In view of the many and grave sanitary defects under which the town of Madras labours, it is disappointing to find that more progress in the great work of improvement was not effected during 1891. On the Black Town drainage, owing to the delay in acquiring the necessary land, little was done, and only one-fifth of the money available was spent. On minor drains and repairs much the same amount was expended as in the year previous. The improvement in the water supply, which is so much needed, has still to be undertaken in earnest. The quality of the Red Hills supply is indifferent, and the quantity so insufficient that it was found necessary to stop all further connections with private houses for the present. Projects for a new water supply are being carefully considered, and a special tax on tobacco has been levied in order to provide funds for the purpose.

18th July 1863.

No. 15.

Memorandum by the Army Sanitary Commission on the Administration Report of the Municipal Commissioner of Bombay for the year 1891–92.

1. *The Census of* 1891.—We shall note briefly on a few points connected with this Report, and more especially with that portion of it which deals with the health of the city. In doing so we shall, for the sake of convenience, follow the same order of subjects as we adopted last year. According to the corrected figures, the population of Bombay, as deduced from the Census of 1891, amounted to 821,764, of whom 518,093 were males and 303,671 females. More particulars as to the changes which have taken place in the population during the preceding 10 years would have been of interest, such as the changes in the proportion of the sexes, in the proportion of children of all ages, and in the proportion of the people in different wards. In 1881 the population had amounted to 773,196, of whom 464,763 were males and 308,433 females. It would thus appear, that while there had been an increase in the population as a whole in 1891, there had been a decrease in the number of females. All these points have an important bearing on the vital statistics, and are therefore deserving of special attention in the Health Officer's Report. It would also have been of interest to know what results were to be obtained from the registration of births and deaths during the 10 years, 1881 to 1890. Adding all the births and deducting all the deaths registered during that period, how far does this product agree with the figures obtained from the Census of 1891, and how are the discrepancies in the different wards to be accounted for?

2. *Births.*—The number of births recorded during 1891 was much the same as in the year previous. Excluding still births they amounted to 15,518, or a ratio of 18·88 per 1,000. According to classes there are some remarkable results. Omitting the communities whose numbers are small, the range extends between 7·97 among Brahmins and 31·72 among low caste Hindus. No explanation is given of these extremes. According to localities the results are equally striking, as the rate varies between 5·56 and 48·41. Here again a more detailed examination of the figures would have been of value. In some instances it would seem that the marked variations are to be explained by the varying disproportion of the sexes, but in others no such explanation holds good.* This disproportion between the sexes which, as has been already seen, has been somewhat intensified since the Census of 1881, is a noteworthy feature in the statistics of Bombay, and necessarily affects the birth-rate to a large extent. For every 100 females, according to the last census, there were 170 males; but this disparity, great as it is, becomes greater still in its influence on the births when we examine the number of males and females at different ages. From the table given at page 413 to show the mortality from fevers at

* In the penultimate column of the statement, at page 427, by mistake "Deaths" have been printed instead of "Births."

different ages, we find that in the earlier years there is very little difference between the two, and that it is during the child-bearing period of life that the disproportion is most marked. At some of the periods given in the table the number of males is more than double the number of females. In these respects the city of Bombay affords a marked contrast to Madras, for there the females are in excess, and instead of a birth-rate of 18·8 as in Bombay, we have a birth-rate of 39·9, or more than double. The figures, as respects both births and deaths in the two stand thus:—

	Population. Census of 1891.			Rate per 1,000 of Population.				
	Males.	Females.	Total.	Births.	Deaths.			Mortality among Infants under 1 Year.
					Males.	Females.	Total.	
Madras - -	225,817	226,701	452,518	39·9	50·9	54·2	52·6	427·5
Bombay - -	518,093	303,671	821,764	18·8	23·9	37·5	29·01	293·3

3. *Deaths by Class and Sex.*—In commenting on the Report for 1890–91 we drew attention to the high ratio of deaths among females as compared with males. In the year 1890 the figures were 23·40 for males and 31·30 for females. In 1891 the difference is still greater, for the male rate is 23·99 and the female rate 37·59, or an excess mortality among females of 13·60 per 1,000. The Health Officer attributes this to the several causes which tell heavily against female life, especially hard toil, poor nourishment, overcrowding, "the impurities of overcrowding, and conditions and diseases "connected with and arising out of child-birth." In nearly every one of the Sanitary Reports of Indian provinces the male mortality recorded is in excess of the female mortality, but the greatest difference is not more than 4 per 1,000. In Coorg, where registration is still very imperfect, we have the solitary instance of a province returning the deaths among females in higher proportion than among males, but the excess is only 1 per 1,000. In Bombay, as already stated, the excess female mortality amounted in 1891 to 13·60. In the town of Madras, as shown in the statement which we have given in the last paragraph, the death-rate of 1891 was exceptionally heavy, and females suffered more than 3 per 1,000 in excess of males. The causes which the Health Officer assigns for the high death-rate among females in Bombay no doubt have their influence, but they are insufficient to explain the results, because the same influences are at work more or less all over India. Further inquiry on this point would seem to be required. Among classes also the death-rate was very unequally distributed. The average for the city was 29·01, but its components varied from 18 among Europeans to 42 among Jains and low-caste Hindus. Among Mussalmans it was 38, and among Hindus of other castes only 25.

4. *Deaths according to Age.*—Among infants under one year the Bombay rate of mortality was 293·3, a considerable advance on 262·45, the rate for 1890, but very much less than 427·5, the ratio for Madras as shown in the foregoing table. At page 392 of the Report a statement is given to show the death-rate from all causes at different periods of life, and similar statements illustrate the mortality from the chief diseases. Taking the deaths from all causes, the female mortality exceeds the male mortality during every one of the sixteen periods entered except four, and in some the excess is great, especially at the child-bearing time, as may be seen from the following comparison of some of them:—

Period.	Mortality.	
	Males.	Females.
10—14 years - - - - -	4·67	13·78
15—19 „ - - - -	8·48	22·23
20—24 „ - - - -	9·85	20·30
25—29 „ - - - -	10·48	20·58

It is difficult to separate any one factor, such as age, or sex, or disease, from locality, and to attempt to say how far that factor taken by itself can be held responsible for the results, and hence the importance of endeavouring to do what we have suggested in previous memoranda, to take all of them together as far as possible, and show the population in each ward according to age and sex and at the same time consider with these data the records of deaths, and the causes to which they are assigned.

5. *Deaths according to Causes.*—The higher mortality of 1891 was spread under a large number of heads, as may be seen from the following comparison of the ratios with those of 1890:—

Diseases.	Number of Deaths.		Ratio per 1,000 of Population.	
	1890.	1891.	1890.	1891.
Small-pox	150	108	·18	·13
Measles	179	614	·22	·75
Fevers	6,489	6,837	8·01	8·32
Cholera	102	164	·12	·20
Phthisis	2,728	3,132	3·37	3·81
Diseases of the nervous system	1,936	2,447	2·39	2·98
„ „ respiratory system	3,335	4,379	4·12	5·33
Diarrhœa	905	1,029	1·12	1·25
Dysentery	507	472	·63	·57
Accidents	397	364	·49	·44
All other causes except still-born	3,806	4,301	4·70	5·23
Total	20,534	23,847	25·35	29·01

For both years the ratios have been calculated on the Census of 1891, and we have added the actual number of deaths in each year to admit of another and more easy mode of comparison. It will be seen that the greater death-rate of 1891 was not due to the prevalence of any epidemic or other particular disease. The more unhealthy character of that year is manifested by increased mortality under many heads. Of the 11 heads under which the deaths are distributed, smallpox, dysentery, and diarrhœa each show a slight diminution. Under all the others there is an increase, but in none of them does it much exceed 1 per 1,000.

6. *Deaths according to Locality.*—The mortality from all causes in each section of the city is detailed at page 399, and the same statement is reproduced in full in Appendix C, at page 587, with changes in the spelling of some of the localities which are confusing. Kamathipura returns the highest death-rate, 44·41. In the Water Division it was only 3·02, and between these extremes there are many gradations. Of the 33 localities 11 return a death-rate of over 30 per 1,000. At page 397 a statement is given, in which the deaths in some of those wards where the mortality was highest are divided according to diseases and other causes to which they were assigned in the registration records. In all of them fevers head the list, and after fevers the most noteworthy causes of death are phthisis, diseases of the nervous system, and diseases of the respiratory system. It would be well if a summary of this kind were given, including all the wards of the town, so that the proportions in which the different causes contributed to the death-rate in each might be seen at a glance. The more we deal with the health reports of the great presidential cities of India, the more we are impressed with the great advantage that would be gained if a few simple standard forms were devised for showing the annual statistics of births and deaths in each of them. Much needless space is now taken up with unnecessary details. For example, in this Bombay Report the population of the city by wards is repeated a dozen times. Much time is occupied in looking for information desired, and when the needful data seem to be forthcoming, there is no guarantee that they have been compiled on the same system in all the three, so that comparison cannot be made with any degree of confidence. The object is to ascertain the facts bearing on the local prevalence and causes of disease, in order that these causes may be dealt with as far as possible, and everything that helps towards this most desirable object is of importance.

7. *Local Sanitary Defects.*—The Kamathipura section it appears is inhabited to a large extent by the poorest of the population, and among them the Health Officer believes that the most potent causes of disease are overcrowding, imperfect ventilation and imperfect house drainage. The place was in former days a swamp, which has been filled up with city refuse, and the people here live over this decomposing soil. A large proportion of them occupy ground floors, and the locality is densely populated. Here are a number of concurrent conditions most unfavourable to health. Great improvements it appears have been effected in this quarter during the last 20 years—improvements in drainage and in air spaces, but, as the Health Officer remarks, further improvements are much required. Kamathipura presents the highest death-rate, and also furnishes the most striking illustration of local insanitary conditions, but in some of the other quarters there are still formidable evils to be dealt with. In Parel there are "pools of sewage amidst dwellings, polluting ground and air, and "oozing to lower levels, often beneath dwellings." In Byculla there is "still sewage in ditches "and lanes." In Second Nagpada house crowding is noted as the main defect. In three of these sections the mortality was heavy. The rates were for—

Kamathipura	44·41
Parel	43·21
Second Nagpada	42·41

8. *History of the Chief Diseases.*—The history of the chief diseases in Bombay during 1891 calls for no special comment. Measles was prevalent in certain quarters, but it added little to the general mortality. In connection with the few deaths from smallpox, it may be noted that according to the Returns vaccination was carried on with great vigour and success, but some explanation is required of the fact that the number of infants under one year who were operated on

(16,662) is nearly 1,000 in excess of the total births recorded (15,518). This may have been due to imperfections in the birth registers, or infants residing elsewhere may have been brought into Bombay to be vaccinated. No reference is made to the discrepancy, nor is it said how far the Vaccination Returns are verified by inspection. Cholera numbered 164 victims, compared with 102 in the year previous, but the death-rate due to this disease equalled only ·20 per 1,000 throughout the city. It is gratifying to learn that in Fanaswadi, a quarter which formerly suffered much coincidental with sanitary improvements, not a single death was recorded during the year.

9. *Leprosy.*—The Health Officer mentions that 106 deaths from leprosy were registered, and adds that "with the collection of lepers in the leper house we must expect more correct registration of "deaths from leprosy, and therefore a larger number of deaths referred to and registered from "leprosy." A considerable portion of the Commissioner's Report is devoted to an account of this leprosy home, and of the reasons which led to its establishment, and occasion is taken to record a dissent from the remarks on the question which we offered in our memorandum on the Bombay Municipal Report for 1889. It is necessary for the right understanding of the matter that we should recall the circumstances under which our remarks were made. The Health Officer, in his Report for that year, stated that in his opinion leprosy was very seriously increasing, because lepers were under no restraint, and were propagating leprosy in the town. He therefore recommended that, in order to prevent this propagation of the disease, the lepers should be compulsorily segregated, and the Commissioner in his general Report suggested, with reference to the Health Officer's remarks, that it might perhaps be found necessary to guard the approaches of the city "so that persons found "to be suffering from a dangerous or infectious disease, or from leprosy, may be intercepted and "taken to a dhurmsala or to a leper asylum for treatment or disposal." The only point we had to consider was whether such measures were likely to reduce leprosy or the other diseases against which they were directed. We came to the conclusion that they were not, and that in any attempt to carry them out much mischief must be done. We are still of the same opinion. The Commissioner in his Report for 1891–92 evidently wrote under the impression that measures of the kind which Bombay approved would be recommended by the Leprosy Commission, and that special legislation by the Government of India would speedily follow in this direction, but the Leprosy Commission seem to have arrived at the same practical conclusions that we had already formed. We observe, in connexion with this question, that a difference of opinion had arisen between the Corporation and the Government of Bombay regarding "hospital accommodation for the reception and treatment of persons suffering from dangerous diseases," which the Government demanded but the Corporation was unwilling to supply. As no particulars are given, there are not materials for forming an opinion on the case, but, as a matter of general principle to which we attach the greatest importance, we may say that, in deciding what is the best course to pursue for the furtherance of sanitation in India, too rigid regard ought not to be had on all points to procedure which has been adopted in England. To attempt anything like the "notification of infectious diseases" in an Indian city would lead, we believe, to no good result, while it would certainly tend to make all the work of the Sanitary Department unpopular. Independent of all other objections, there is no machinery for carrying out such a system, and the attempt to enforce it must prove a failure.

10. *Sanitary Work.*—The Engineer's Report shows that good progress continued to be made in sanitary work. It having been decided to maintain the drainage outlet at Worli, arrangements have been made to supply the pumping station at Love Grove with entirely new machinery. Several new latrines and urinals have been erected, and fair progress made in house connections. As regards water supply, the great event was the completion and opening of the Tansa Works, which will supply from 20 to 21 millions of gallons daily to the city of Bombay. In the Health Officer's Report incidental reference is made to several important improvements effected during the year. In Parel, for example, the sewage ditch near the Chinchpoogly station, which had been noted on in the previous year as "festering and corrupting" had been removed. In Byculla progress is reported, and nuisances have been abated. It is by such work that the health of the city will be improved.

18th July 1892.

STATEMENT

OF THE

TRADE OF BRITISH INDIA

WITH

BRITISH POSSESSIONS AND FOREIGN COUNTRIES

FOR THE

FIVE YEARS

1887-88 TO 1891-92.

Presented to both Houses of Parliament by Command of Her Majesty.

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1893.

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STATEMENT

OF THE

TRADE OF BRITISH INDIA

For 1891-92.

INTRODUCTION.

[NOTE.—*All values are given in this volume as "tens of rupees," a denomination which, while not subject to the charge of inaccuracy attaching to that of "£ sterling," calculated at the nominal exchange of 2s. to the rupee, nevertheless enables comparisons to be made with the figures in any past volumes in which that expression of values was employed. The sign* Rx. *is used to signify tens of rupees.*]

Below is shown in a tabular form the total trade of British India with other countries by sea, during the past five years:—

	Tens of Rupees.				
	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
Private Imports:					
Merchandise	62,384,813	66,570,318	66,560,121	69,034,900	66,587,457
Treasure	13,825,856	13,844,960	17,459,301	21,919,486	14,722,662
	76,210,669	80,415,278	84,019,422	90,954,386	81,310,119
Private Exports:					
Merchandise	90,471,462	96,978,171	103,396,862	100,135,722	108,036,010
Treasure	1,513,954	1,703,497	1,841,920	2,071,906	3,143,186
	91,985,416	98,681,668	105,238,782	102,207,628	111,179,196
Government Transactions:					
Imports — Stores	2,619,799	2,870,149	2,637,368	2,940,470	2,844,926
Imports — Treasure	0	0	200	15,000	0
Exports — Stores	72,193	71,361	63,536	91,626	137,582
Exports — Treasure	90,670	80,850	64,402	51,272	143,500
	2,782,662	3,022,360	2,765,506	3,098,368	3,126,008
Total Trade	170,978,747	182,119,306	192,023,710	196,260,382	195,615,323
Excess Exports of Merchandise (including Government Stores)	25,539,043	27,609,065	34,262,909	28,251,978	38,741,209
Excess Imports of Treasure	12,221,232	12,060,613	15,553,179	19,811,308	11,435,976
Net Excess Exports of Total Trade	13,317,811	15,548,452	18,709,730	8,440,670	27,305,233

The usual "Tables relating to the foreign sea-borne trade of British India" are appended, with a "Review of the Trade of India," by Mr. J. E. O'Conor, C.I.E., Assistant Secretary to the Government of India in the Department of Finance and Commerce.

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Under Secretary of State.

India Office,
26th January 1893.

SECTION I.—SEA-BORNE FOREIGN TRADE.

CHAPTER I.

General Summary.

The year 1890–91 was marked by extraordinary fluctuations in the exchange value of the rupee. From 1*s.* 5*d.* in January 1890 the rate rose to over 1*s.* 8½*d.* in September, an increase of more than 20 per cent., falling again in February 1891 to 1*s.* 5*d.* The consequence of these violent fluctuations was a complete dislocation of the course of trade. Importers hastened to profit by the rise before prices were adjusted to the new level, and large quantities of goods were shipped to India in the few months during which the rise was in progress. Holders of silver also sought to turn their silver into gold at a high rate of exchange, and abnormally large quantities were thrown on the Indian market and turned into gold by bank drafts on London. Unusually large quantities of gold also were imported, and on the other hand, the export of merchandise was restricted, while the rise was in progress.

In 1891–92 these conditions were greatly modified. Exchange took a rapid downward course, falling from about 1*s.* 5⅛*d.* in April 1891 to about 1*s.* 3 1/32*d.* in April 1892, a decline of more than 12 per cent., and though not unaccompanied by fluctuations, these were not so rapid or so violent as in 1890-91.

The general outcome of the conditions was that, whereas in 1890–91 there was a largely increased importation of merchandise and gold and silver and a restriction of the export trade, in 1891–92 there was a restricted import and an augmented export of merchandise and gold and silver. The total value of the trade of the year, notwithstanding the special stimulus given to it by a rapidly falling exchange and an abnormal demand for wheat and other food-grains in the European markets, was smaller than that of 1890–91.

Total Trade.—The trade of the last three years compares thus :—

	1889–90.	1890–91.	1891–92.
Imports.	Rx.	Rx.	Rx.
Merchandise	66,560,121	69,034,900	66,587,457
Gold	5,071,027	6,500,832	4,118,929
Silver	12,388,274	15,418,654	10,603,733
Total Imports	84,019,422	90,954,386	81,310,119
Exports.			
Foreign merchandise re-exported	4,295,808	4,233,529	4,485,179
Indian merchandise	99,101,055	95,902,193	103,550,831
Gold	455,723	864,660	1,705,137
Silver	1,386,196	1,207,246	1,438,049
Total Exports	105,238,782	102,207,628	111,179,196

The total trade—imports and exports together—was—

	Rx.
1889–90	189,258,204
1890–91	193,162,014
1891–92	192,489,315

showing a decline of about 0·35 per cent. on the trade of 1890–91. In the five years 1887–88 to 1891–92 the increase in trade values has been 14·44 per cent., being at the rate of about 2·89 per cent. annually, which is a slow increase relatively to the progress made in former years.

Including Government transactions the aggregate trade of the three years was—

	Rx.
1889–90	192,023,710
1890–91	196,260,382
1891–92	195,615,323

The principal features of the year were (1) the quite unprecedented cheapness of money throughout the year caused by the unusual imports of silver in the preceding year and by the depressed condition of trade which slackened the demand for money; and (2) the phenomenal increase in the exports of wheat caused by the failure of the European crops. Apart from this activity in the wheat trade it cannot be said that the general commerce of India manifested any very favourable symptoms. In imports there was a heavy decline under the important heads of cotton manufactures and railway material, and also in sugar; and though in several items there are increases, none of them are of special significance.

In exports the principal increases were in grain and pulse, seeds, and, to a smaller extent, in tea. On the other hand, there was a regrettable decline in cotton and jute and in cotton manufactures, this being the first year in which there has been a pause in the progress of the trade in these manufactures.

The increase in the aggregate value of the export trade was Rx. 7,648,638, and as the increase in the value of the grain trade was no less than Rx. 9,156,383 it is evident that the failure of the harvests in Continental Europe saved our export trade from showing an appreciable decline.

A general view of our trade for the last quarter of a century gives the following features. The total value, including specie as well as merchandise and imports and exports on account of Government, was:—

	Rx.
1. Annual average, five years ending 1871–72	102,349,797
2. Annual average, five years ending 1876–77	102,050,970
3. Annual average, five years ending 1881–82	127,945,868
4. Annual average, five years ending 1886–87	156,276,284
5. Annual average, five years ending 1891–92	186,799,483

The rate of progress has been as follows:—

	Per Cent.
In the second period, decline	0·3
In the third period, increase	25·37
In the fourth period, increase	22·14
In the fifth period, increase	19·53

The second of these periods commenced with 1872–73, in which year the first divergence of value between gold and silver showed itself, and ended with 1876–77, in which year a heavy and sudden fall occurred in the gold price of silver. Prices had not accommodated themselves to the change in the relative values of the precious metals, and, while there was a restriction of imports and an augmentation of exports, the aggregate value of the trade diminished.

In the third period an adjustment of prices took place and, notwithstanding that the period included the two great famine years of 1877 and 1878, trade expanded. It has progressed since then, but it will be noted that the advance has been made with increasing slowness, although during this last decade the import duties were abolished, the railway mileage increased by 70 per cent. and missing links supplied bringing vast areas of country within easy reach of markets previously inaccessible to them, irrigation was largely extended, the seasons were on the whole good and the period unmarked by drought or distress on an extensive scale, internal barriers to trade were swept away, steamers specially built for the full utilisation of the Suez Canal, the principal ports completely fitted with wharves, jetties, docks, and other trade appliances, banking and other facilities for commerce widely spread over the country, and generally quite a revolution accomplished in the conditions of trade.

If with the assistance of all these changes the trade has increased at diminished speed, it might be concluded that in another twenty or twenty-five years the trade will reach its fullest limit of expansion. This inference must, however, be qualified by

consideration of the fact, that though the external trade of the country has been immensely facilitated by the circumstances just mentioned, it has on the other hand been much hampered in its development by the condition of the currency. A heavy decline in the gold value of the rupee, accompanied from time to time by violent fluctuations, has greatly embarrassed legitimate trade, and there can be no reasonable doubt, on consideration of all the circumstances, that if it had not been for this instability in the exchange value of the Indian currency standard, the progress of our trade would have been much more marked.

Imports and exports have increased respectively in the periods mentioned in the following proportions:—

	Imports.	Exports.
1.	—	—
2.	— 6·8 per cent.	+ 5 per cent.
3.	+ 30·7 „	+ 21·5 „
4.	+ 24·4 „	+ 20·3 „
5.	+ 22 „	+ 17·5 „

The total increase in imports is about 70 and of exports about 64 per cent. It is apparent, therefore, that there is no ground for the proposition so often stated with great confidence in India and elsewhere that a low exchange stimulates exports and has the contrary effect on imports. It should be obvious that this effect could not possibly be produced by a low rate of exchange, and that it can only be produced by an increase of indebtedness which necessitates increased exports in payment of debt and (if the indebtedness has been incurred for unproductive purposes) leaves the country so much the poorer, and therefore unable to increase her imports. The delusion, however, has been very tenacious of life, like many other delusions. The proposition, if it were accurately stated, really means that a falling exchange (not necessarily a low exchange) stimulates exports during the progress of the fall, exporters hastening to profit thereby, and importers holding off to avoid loss until the fall ceases. This state of things is quite temporary, lasting only as long as an adjustment of prices does not take place. But prices are always adjusted more or less promptly according to circumstances, and the stimulating profit to exporters as well as the restrictive loss to importers disappears. This has been clearly enough seen in the trade of the last two years, and it is still more clearly seen in the trade of any number of years.

CHAPTER II.

Imports of Merchandise.

The values of imported merchandise since 1869–70 stand thus:—

	Exchange.	Rx.
	d.	
Annual average, 1869–70 to 1873–74	22·770	31,837,600
Annual average, 1874–75 to 1878–79	20·981	36,603,400
Annual average, 1879–80 to 1883–84	19·774	47,950,000
Annual average, 1884–85 to 1888–89	17·656	58,515,400
1889–90	16·565	66,560,120
1890–91	18·089	69,034,900
1891–92	16·733	66,587,457

The value of the trade last year was about 3½ per cent. less than in the preceding year, and was just about the same as in 1889–90.

Taking the prices of March 1873 as = 100, the following table shows the variations in the prices of staple imports since then at Calcutta :—

—	Grey Shirtings, 8¼ lbs.	Mule Twist, White, No. 40.	Mule Twist, Turkey Red, No. 40.	Copper, Sheathing.	Iron, Flat, Bolt, &c.	Total.
March 1873	100	100	100	100	100	500
June 1874	97	92	106	95	108	498
March 1875	86	92	102	103	93	476
„ 1876	86	90	92	99	79	446
January 1877	78	90	85	92	67	412
„ 1878	73	78	87	86	60	384
„ 1879	76	75	78	80	56	365
„ 1880	81	84	75	83	73	396
„ 1881	82	82	69	81	56	370
„ 1882	78	84	69	89	71	391
„ 1883	82	74	54	80	60	350
„ 1884	75	74	62	77	62	350
„ 1885	76	72	58	64	54	324
„ 1886	84	67	57	57	50	315
„ 1887	81	62	57	65	53	318
„ 1888	79	75	59	90	61	364
„ 1889	81	75	57	98	65	376
„ 1890	76	74	57	69	79	355
„ 1891	74	70	56	71	62	333
„ 1892	74	64	57	72	64	331
July 1892	70	62	58	77	61	328

Prices continue low—for grey shirtings they are lower than they have been for twenty years, standing 30 per cent. below the level of 1873. Grey and coloured twist has fallen still more heavily.

The following are the largest articles in the import trade. Against each is set its increase or decrease per cent. in value in the last two years :—

—	1890–91.	1891–92.	—	1890–91.	1891–92.
Apparel	+ 4·0	+ 3·6	Oils	— 0·4	+ 0·06
Coal	+17·9	—18·9	Provisions	— 7·5	+20·0
Cotton manufactures	+ 3·8	— 7·5	Railway material	+ 9·9	—25·8
Drugs, medicines, and narcotics.	+21·7	+ 2·9	Salt	—12·9	—19·4
			Silk, raw and manufactured	—12·0	+20·5
Glass and glassware	+ 0·4	+11·9	Spices	— 4·6	— 1·9
Liquors	— 2·8	+ 1·3	Sugar	+54·5	—24·6
Machinery and millwork	—15·2	+ 2·3	Woollen goods	+24·9	— 3·0
Metals	+ 0·6	+ 0·7			

In most of the important items, *e.g.*, cotton manufactures, railway material, sugar, woollen goods, salt, coal, apparel, there has been a more or less heavy decline in the year. The increase in the other articles in the list was far from compensating for the decreases.

For the classes under which the items are arranged in the trade returns the values of the trade in each of the classes in the last five years are stated below in Rx. :—

—	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
1. Animals, living (mostly horses)	256,103	295,300	239,708	295,430	293,257
2. Articles of food and drink	7,497,006	7,469,086	7,867,666	8,628,852	8,176,797
3. Metals and manufactures of metals, including hardware and cutlery, machinery and millwork, and railway plant and rolling stock.	10,784,843	9,966,327	11,058,900	10,909,477	10,489,837
4. Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials.	1,006,324	1,195,801	1,280,331	1,397,479	1,535,216
5. Oils	1,486,791	2,072,825	2,645,213	2,634,187	2,635,955
6. Raw materials and unmanufactured articles.	3,944,042	4,115,681	3,725,259	4,032,765	3,828,053
7. Articles manufactured and partly manufactured.	37,409,702	41,455,297	39,743,039	41,136,710	39,628,312

The value of the whole trade has increased by less than 7 per cent. in five years, and it stands at almost the same figures as in 1888–89 and 1889–90, thus :—

	Rx.
1887–88	62,384,813
1888–89	66,570,318
1889–90	66,560,120
1890–91	69,034,900
1891–92	66,587,457

Articles of Food and Drink.

Coffee.—The imports of coffee are mainly from the Straits Settlements and to a small extent from Ceylon, into Bombay. They amounted to 26,258 cwt. last year, valued at Rx. 144,076, being more than double those of the preceding year. But a small proportion—less than a fourth—was re-exported. It seems odd that Indian coffee should be displaced to such an extent by foreign importations. The imports before 1890–91 averaged about 22,000 cwt.

Food-grains.—Importations of food-grains more than doubled, attracted by the high prices ruling during the year, and those of wheat increased nearly three-fold. The total quantity of grain imported was, however, small, being under 26,000 tons, wheat representing 17,295 tons. About four-fifths of the grain imported come from Asiatic Turkey and Persia.

Liquors.—The importations of beer continue on the large scale which has marked recent years, about 2,974,000 gallons having been imported last year. In five years the imports have increased by as much as 39 per cent., the increase being steady year after year. The causes have been suggested in previous reviews. To some material extent they lie in the withdrawal of Government from the supply of beer to the British soldier in the Madras and Bombay Commands. Under those arrangements Indian beer was supplied under contract with the brewers, but the soldier seems to prefer imported beer, and consequently there is a large increase in the imports into Bombay and Sindh as also Burma (which is a part of the Madras Command). The quantity of beer brewed in India has not increased in recent years. From 1887 to 1891, the returns give the following quantities : 5,085,000 gallons, 5,352,200 gallons, 5,171,700 gallons, 5,192,600 gallons, 4,745,800 gallons.

Spirits continue to decline, the importations of last year having been 1,010,247 gallons only, which means a decline of 4·3 per cent. on the trade of 1890–91. This trade is certainly making no progress, as will be seen from the imports in the last five years :—

	Gallons.
1887–88	1,084,487
1888–89	1,119,367
1889–90	1,100,414
1890–91	1,055,984
1891–92	1,010,247

The imports of brandy in this period have fallen 29 per cent., the decline being continuous ; gin has fallen 20 per cent. ; rum 70 per cent. ; the trade seeming to be in a fair way to extinction, for the imports last year did not amount to 16,000 gallons.

Whisky alone maintains the favour into which it came some years ago, the increase in the five years being 15½ per cent. The steady and continuous increase of whisky is due to its own merits. It is a clean liquid which makes a good combination with iced soda-water ; it does not incur the suspicion of being sophisticated like the so-called brandies sent to India ; it is cheap and it goes a long way with poor and sober men, a description which applies to most Anglo-Indians.

Liqueurs are also a stationary trade and a small one, the whole imports being under 13,000 gallons.

Wines likewise do not increase. The imports last year (370,000 gallons) were about two per cent. larger than in 1890–91, but smaller than they were five and ten years ago.

The Anglo-Indian community consume the greatest part of the spirits, liqueurs, and wines imported, and while the prices of these articles are increased by dealers and traders in more than the ratio of the fall in exchange, it is reasonable to look for a restricted consumption.

Salt.—The imports of salt have again declined. They have been as follows in the last five years :—

	Tons.
1887–88	423,897
1888–89	398,810
1889–90	410,808
1890–91	395,243
1891–92	373,953

The reduction of salt imports from the United Kingdom and the increased imports from Germany, of which mention has been made in previous reviews, still continue. The imports of the last five years have been as follows (in tons) :—

——	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
United Kingdom	339,651	337,089	285,767	273,008	222,260
Germany	23,187	7,711	45,439	60,540	103,403
Arabia	42,633	20,129	35,736	11,322	9,840
Aden	15,004	17,897	33,782	36,662	33,969
Other countries	3,422	16,484	10,084	13,711	4,481
	423,897	398,810	410,808	395,243	373,953

German salt has now taken a considerable place in the supply at the expense of Cheshire salt, the latter having fallen off by fully one-third in five years, and the former having increased five-fold in the same period. Additional competition is promised in the near future from certain salt deposits in the Argentine Republic, regarding which sanguine expectations appear to be held. This prospect, however, may for the present be dismissed, and attention may be confined to the actual competition of Germany and Aden. It has certainly lowered the price of Liverpool salt at Calcutta, as the figures below show :—

——	Rupees per 100 Maunds.	——	Rupees per 100 Maunds.
1881–82	51·9 to 60·4	1887–88	73·5 to 80·8
1882–83	48·9 „ 55·9	1888–89	88·3 „ 102·6
1883–84	56·3 „ 62·3	1889–90	89·8 „ 98·2
1884–85	52·5 „ 57·9	1890–91	71·2 „ 81·2
1885–86	55·9 „ 60·6	1921–92	57·5 „ 69·0
1886–87	68·5 „ 74·4	July 1892	55·5 „ 63·25

Sugar.—The imports of sugar were smaller than in 1890–91, when they reached the large quantity of 2,932,000 cwt. Last year they amounted to 2,213,125 cwt. The importations in 1890–91 were no doubt stimulated by the rise in exchange, but the trade still remains very large.

The imports were mostly from the following countries :—

——	1890–91.	1891–92.	——	1890–91.	1891–92.
	Cwt.	Cwt.		Cwt.	Cwt.
From Mauritius	1,494,945	1,471,916	From Java	60,098	127,771
„ Germany	709,195	242,705	„ Austria	31,374	22,505
„ China	195,912	177,416	„ Belgium	25,044	—
„ United Kingdom	281,202	30,233	„ France	9,356	15,409
„ Straits	118,944	123,761			

While the imports of beet sugar from Europe and cane sugar from Mauritius, China, the Straits, and Java continue on a large scale, the export of Indian sugar unfortunately continues on a restricted scale, having amounted last year to under 978,000 cwt., that is, we imported more than double the quantity we exported; and while most of the imported sugar is refined, most of the exported sugar is unrefined. This is a very unsatisfactory feature in Indian trade.

Tea.—Nor are the imports of tea entirely satisfactory. These have nearly doubled in five years, the quantity imported last year having amounted to 6,353,000 lbs. Much of the tea is re-exported, some by sea (a little over half last year) and some across the frontier. But a substantial proportion remains in the country, and though a great part of this is inferior China tea consumed by people who cannot afford the better Indian tea, it is not a little surprising to find a European firm in Bombay advertising that it regularly supplies Ceylon tea to various clubs, military messes, and private individuals in Western India, and that it is prepared to send Ceylon tea to the United Kingdom to the friends of Anglo-Indians. The tea imported from Ceylon last year amounted to 849,737 lbs.

III.—Metals and Manufactures of Metal.

Hardware and Cutlery.—The imports of hardware and cutlery keep at an increasing figure. The average of the five years preceding 1890–91 was Rx. 986,855. In 1890–91 the value was Rx. 1,197,614, and last year it was Rx. 1,238,994. The bulk of these goods still comes to us from the United Kingdom, but the increasing share in the trade taken by Germany, Austria, and Belgium is noticeable. From these countries the imports in 1885–86, and in the last two years, were as follows :—

	1885–86.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
Germany	1,913	55,794	76,523
Austria	15,302	46,007	45,099
Belgium	20,835	28,774	49,692

These three countries have got about 14 per cent. now of a trade of which they had nothing or next to nothing a few years ago. To some extent it is no doubt only a transfer, goods being sent direct which were formerly shipped through England.

Copper.—In was remarked in the review for 1890–91 that the imports of copper fluctuate with the prices of the metal and with the material condition of the people, and that the profits derived from an exceptionally good wheat harvest combined with exceptionally high prices were causing an expansion in the imports of copper after a restriction in the year then under review. The year's imports amounted to 511,088 cwt., being 14 per cent. in excess of those of 1890–91. The increase was in the forms of copper used by the people for industrial and domestic purposes, unwrought and wrought. The imports of sheathing copper fell off.

Iron.—In 1890–91 there was an increase of about 7½ per cent. in the imports of iron, which amounted to 193,828 tons. Last year there was a decline of over 5 per cent. in the imports, which amounted to 184,024 tons. The average of the last three years is 186,090 tons, which is materially below the imports (over 200,000 tons) of the two years preceding these three. The fluctuations of 1890–91 and 1891–92 undoubtedly followed the fluctuations of exchange.

There has been a very noticeable increase in the imports of iron from Belgium in recent years. In 1886–87 the imports of Belgian iron were but 8,100 tons; last year they were as much as 38,800 tons. From the United Kingdom, on the other hand, we received 155,142 tons in 1886–87, and only 143,000 tons last year. It is of course possible that this change may mean to some extent only a change in the way of shipment, Belgian iron coming into India direct instead of by way of England, but there is reason to believe that Belgian iron is in fact increasingly used in India. But very little cast iron is imported, most of the requirement being for wrought iron in the forms mentioned below :—

	Tons.
Bar	48,288
Angle, bolt, and rod	25,611
Sheets and plates (including tinned plates)	23,831
Galvanised	19,389
Hoops	5,346
Nails, screws, and rivets	6,981
Beams, pillars, girders, and bridge work	16,725
Pipes and tubes	19,465

These kinds represented 165,000 of the 184,000 tons of all kinds of iron imported last year.

Steel.—Of steel the imports have greatly increased of late years, the cheaper and commoner forms taking the place of iron. In 1887–88 the imports were 21,046 tons; last year they were 38,651 tons.

As with iron, so with steel, Belgium is taking a largely increased share of the trade, while imports from the United Kingdom augment but little. The imports from the two countries have been as follows:—

	1886–87.	1891–92.
	Tons.	Tons
United Kingdom	16,387	17,390
Belgium	962	15,078

The total value of all the metals imported (excluding hardware and cutlery) was Rx. 5,655,072, of which copper represented Rx. 2,089,024, and iron and steel Rx. 2,780,809, being about 86 per cent. of the whole. The other metals imported—brass, lead (mainly for tea chests), quicksilver, tin, zinc—are of small importance.

Machinery and Millwork.—The value of the imports of machinery and millwork was Rx. 2,111,596, a small increase on the preceding year, but still below the level of the two years before that. There is a pause in the construction of cotton mills, but machinery is required each year in increasing quantities for workshops and foundries, tea gardens, steamers, and factories of all kinds, as well as for the addition of looms and spindles to existing cotton and jute mills.

Railway Material.—In railway materials there was a heavy decline, the value of the imports being only Rx. 1,484,173 against Rx. 2,001,852 in 1890–91. It seems that railway companies brought out material when exchange rose and restricted their imports when it fell again. Also the construction of some new lines was completed early in the year or before it commenced.

Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Material.—There has been an increase in chemicals, dyes, &c., mainly due to the augmented import of aniline and alizarine dyes. The rapidity with which these dyes are superseding indigenous vegetable dyes is shown by the imports of the last four years:—

	(000's omitted). Ounces.
1888–89	52,739
1889–90	57,682
1890–91	61,722
1891–92	89,474

About three-fourths of the imports are from Belgium.

Oils.

Petroleum.—The imports of petroleum have increased rapidly in the last five years:—

	(000's omitted). Gallons.
1887–88	31,421
1888–89	39,952
1889–90	53,390
1890–91	54,235
1891–92	58,109

As mineral dyes are fast superseding the vegetable dyes of the country, so is mineral oil fast superseding the vegetable oils, at least so far as these are used for illuminating purposes. The reason is the same in both cases. The indigenous dyes and oils are produced with labour and are uncleanly and more or less inefficient in use. The imported dyes and oils are easy of application, cleanly and efficient in use, and give much better results. The complete supersession of the indigenous dyes and oils is a question of time only, and not a long time either, and doubtless when the time arrives the native press will deplore the loss of two more local manufactures. Nevertheless the editors will write their articles by the light given by kerosine oil in an imported lamp, and they would be surprised if they were asked to encourage local manufacture

by refusing to use anything but a *chirág* fed by mustard, castor, or cocoanut oil, or by requiring their wives to wear garments dyed with safflower, lacdye, or turmeric. There is indeed a method by which one of our oils (linseed) might be largely used, namely, in the manufacture of paint; but it does not seem to occur to the editors to suggest that capital might with profit be put into such an industry, although we imported linseed oil last year to the value of nearly 5½ lakhs of rupees and paints to the value of 22½ lakhs.

Russian oil is now more largely imported than American oil:—

	1890–91.	1891–92.
	Gallons.	Gallons.
From Russia - -	19,843,423	28,333,635
From United States -	32,692,946	27,293,985

and the question suggests itself whether Russian oil, which has gained a large place in India in five or six years, is likely to thrust American oil out of our market? It is not improbable that it will, for the oil is of good quality and cheaper than American oil, if for no other reason because of the smaller freight from the Black Sea than from the Atlantic ports of the United States. In that case the import trade from the United States will practically cease to exist unless the Americans can find something else to send to us, for kerosine oil constitutes about 92 per cent. of the imports from the United States.

Cocoanut Oil.—The imports of cocoanut oil continue on a large scale, about 1,459,000 gallons having been imported from Ceylon, Mauritius, the Straits and Hong Kong, the bulk of it into Bengal. It is strange that the Bengalis, who use this oil largely on their persons, and who have the material for its production in great abundance, are not able to dispense with importations which cost them last year about 16½ lakhs of rupees.

Raw Materials and Unmanufactured Articles.

Coal.—The imports of coal, coke, and patent fuel are not on an increasing scale:—

	Tons.
1887–88 - - - - -	848,878
1888–89 - - - -	833,478
1889–90 - - -	601,670
1890–91 - - - - -	784,664
1891–92 - - - -	736,971

There was a heavy decline in the imports into Bombay, which has the bulk of the trade, due partly to the depression in the cotton mill industry and partly to large stocks resulting from an excessive import in 1890–91 tempted by the rise in exchange in that year. The importation of patent fuel seems to have entirely ceased. The production of coal in India is reported to have been, in 1891, 2,229,400 tons, but the returns are imperfect, and it is probable that the production was in excess of 2¼ million tons. Until 1884, production was confined to Bengal and the Central Provinces: in that year Assam and Central India yielded some coal, and then followed, in 1887, the Punjab, Baluchistan, and the Nizam's Dominions. With the further development of coal-mining and with reduced charges and increased facilities for transport by railway and steamer India should be in a position before many years have elapsed to dispense with imported coal which last year cost her Rx. 1,250,000.

Cotton.—A new feature has been introduced in the last two years into the cotton import trade, which used to be limited to the importation of Persian and Mekran cotton, by the introduction of 17,000 cwt. of American and Egyptian cotton, following on the importation of 3,500 cwt. of Egyptian cotton in 1890–91. The excessively low prices of cotton last year prompted the comparatively large introduction of this long-stapled fibre, for the purpose of experiment in the manufacture of the finer yarns and fabrics in Bombay.

Silk.—Of Chinese and other silk there were imported 2,701,000 lbs., valued at Rx. 1,264,000. It is clear that Indian silk is not able to hold the market; our exports to foreign countries of Indian silk amounted to little more than half the imports (1,662,519 lbs. valued at Rx. 518,000). The imported silk is all used for manufacture in Bombay and Burma.

Wool.—The trade in wool is slightly in excess of that of the preceding year, but it is practically stationary. Most of it comes from Persia and the Mekran coast for reshipment to Europe from Bombay and Karáchi. A small quantity now comes from Australia for the manufacture of fabrics of the finer qualities in the Indian mills, for our wool, like our cotton, is short in staple and inferior in quality.

Manufactured Articles.

Cotton Yarn.—The imports of cotton twist and yarn in the last five years have been as follows :—

	Lbs.
1887–88	51,543,000
1888–89	52,587,000
1889–90	46,383,000
1890–91	50,971,000
1891–92	50,404,000

The imports in 1890–91, stimulated by rising exchange, were much larger than in 1889–90, but they have since receded, and the trade is making no progress, for it is smaller in fact than it was four and five years ago.

Cotton Fabrics.—Cotton piece-goods also exhibit a non-progressive character. The trade in unbleached goods is smaller than it has been for six years previously, and in both white and coloured goods there is no advance apparent. Comparing the trade with that of 1890–91 there is a material decline, but though that is largely due to the conditions of exchange, it is apparent on a view of the trade for several years past that, irrespective of exchange, it makes no progress. It must be inferred that, as suggested in the review of the trade of 1890–91, imported piece-goods are being gradually superseded by local manufactures.

	Grey (Unbleached).	White (Bleached).	Coloured, Printed, or Dyed.
	Yards.	Yards.	Yards.
1887–88	1,180,175,000	320,464,000	339,103,000
1888–89	1,347,299,000	406,492,000	372,457,000
1889–90	1,257,001,000	339,098,000	400,949,000
1890–91	1,280,540,000	373,149,000	360,335,000
1891–92	1,173,176,000	361,395,000	348,117,000

The foregoing remarks on the stagnation of the trade in piece-goods apply also to almost all other kinds of cotton manufactures—to handkerchiefs and shawls in the piece, loce and net, canvas, and other sorts. But in the case of these it cannot be said that local manufacture is superseding them, for they are not locally manufactured.

Values in the case of this important trade have fallen in greater proportion than quantities, as the following figures show :—

	Cotton Twist.	Cotton Goods.
	Rx.	Rx.
1887–88	3,581,906	23,924,467
1888–89	3,746,797	27,764,508
1889–90	3,482,529	26,391,398
1890–91	3,768,362	27,241,987
1891–92	3,514,619	25,174,852

These values combined represent 43 per cent. of the whole import trade in merchandise: ten years ago the ratio was 49½ per cent.

Silks and Woollens.—Silk piece-goods were imported in much larger quantities than in 1890–91, but the importations in that year were on a very depressed scale, owing largely to distress in Burma. The trade does not seem to advance. In woollen goods also the demand does not appear to increase except in respect to shawls, for which the demand is large. These were imported in 1890–91 in excessive quantities by traders desirous of profiting by the rise in exchange, and last year there was a reaction.

Other Manufactured Goods.—Of the other articles enumerated in this class the following are the most important. The value of the trade in each of the last three years is here specified :—

	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
*Apparel, including boots and shoes	1,296,394	1,349,897	1,398,027
Arms and ammunition, including dynamite and other explosives.	191,591	206,331	206,517
Books and printed matter	215,027	222,401	221,594
Building materials	179,220	184,816	173,010
*Cabinet-ware and furniture	99,397	91,415	113,258
Candles	135,947	111,495	126,777
*Clocks and watches	104,531	129,732	140,283
Corals, real	140,194	168,716	168,112
*Earthenware and porcelain	223,929	227,874	273,573
*Glass and glassware	647,127	650,236	728,203
Instruments and apparatus :—			
Musical	85,588	94,165	95,772
Scientific	99,894	106,428	121,724
Jewellery and plate	83,716	94,551	90,100
*Leather and leather goods, excluding boots and shoes.	184,818	170,255	191,459
*Matches	239,407	282,755	331,689
Paints and colours, and painters' materials	267,366	302,861	292,858
*Paper and pasteboard	407,479	431,436	470,339
Soap	111,388	92,852	110,417
*Stationery	232,133	223,874	245,567
*Toys and requisites for games	135,862	150,094	161,394
*Umbrellas	314,106	326,092	414,942

For most of these classes of goods (candles, corals, and umbrellas excepted) the chief consumers are to be found in the European population ; but the increase in many of them—those marked with an asterisk—indicates a change which is proceeding in the habits of the native population in the larger towns, who are gradually abandoning the primitive style in which they or their fathers were content to live, and are furnishing and decorating their houses with imported lamps, glassware, and furniture, and using imported goods for personal requisites.

The list appended states in the order of their importance the principal articles of merchandise imported into India :—

	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
Cotton goods and yarn	29,873,928	31,010,349	28,689,471
Metals, including hardware and cutlery	6,802,177	6,843,762	6,894,067
Silk, raw and manufactured	2,845,159	2,501,430	3,014,698
Oils, chiefly mineral	2,645,213	2,634,187	2,635,955
Sugar	2,200,049	3,399,886	2,561,996
Machinery and millwork	2,435,385	2,063,863	2,111,596
Provisions	1,596,565	1,476,070	1,771,793
Woollen goods	1,455,235	1,818,213	1,762,031
Chemicals, drugs and medicines, dyes, &c.	1,280,334	1,397,479	1,535,216
Railway material	1,821,337	2,001,853	1,484,173
Liquors	1,465,144	1,423,460	1,442,095
Apparel	1,296,394	1,349,898	1,398,027
Coal	1,308,590	1,543,442	1,250,493
Spices	852,350	813,115	797,196
Glass and glassware	647,127	650,236	728,203
Salt	894,532	779,034	627,953
Paper and pasteboard	407,479	431,436	470,339
Umbrellas	314,106	326,092	414,942

The two first items comprised nearly 55 per cent. of the whole value of imports in 1890–91, and about 53½ per cent. in 1891–92.

CHAPTER III.

Exports of Merchandise.

1.—*Exports of Foreign Merchandise.*

The figures of the re-export trade for the last five years are as follows:—

Rx.
4,101,440
4,335,437
4,295,808
4,233,529
4,485,179

The following are the main items of the re-exports, with their values:—

	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
Articles of food and drink:			
Provisions	137,611	131,301	117,552
Spices	116,779	68,753	30,179
Sugar (refined)	267,609	197,659	192,628
Tea	167,838	285,060	315,741
Metals and metalware:			
Hardware and cutlery	47,541	52,651	69,583
Copper	83,614	66,943	105,760
Iron	105,726	66,018	82,884
Chemicals, drugs, &c.	57,875	57,865	67,881
Raw materials:			
Gums and resins	73,611	60,922	68,785
Ivory (unmanufactured)	125,543	149,457	150,468
Silk	33,951	40,024	37,498
Wool	693,527	624,681	630,839
Manufactured goods:			
Cotton twist and yarn	91,382	83,801	113,665
Cotton manufactures, piece-goods, &c.	1,728,358	1,710,493	1,817,165
Silk manufactures	57,758	64,677	66,982
Woollen manufactures	50,349	65,120	78,302
Apparel	103,457	102,503	100,038
Glassware	32,024	34,317	41,199

The decline in the re-export of spices is explained by the circumstance that the bulk of this trade has always consisted of cloves brought from Zanzibar to Bombay for reshipment to Europe. This trade has rapidly fallen away in the last five years with the opening out of direct communications between Zanzibar and the Western markets. In 1887–88 the value of the clove trade was Rx. 222,000; last year it was only a tenth of that sum, the decline being steady from year to year, and the trade may be said to be practically extinct, except as regards China, the Straits, and other countries east of the Suez Canal.

The trade in tea on the other hand has increased in five years from 1,468,000 lbs. to 3,368,000 lbs. Most of it is shipped to Persia, the bulk of it being China and Java tea. Indian tea is now being sent to that country also in larger quantity than has hitherto been the case, over $2\frac{3}{4}$ million lbs. having been sent thither last year. We should nevertheless be able to make a better show with our tea in those regions than the Chinese and others who send their tea to Bombay for reshipment to markets which we might fully occupy.

In regard to the other articles, such as cotton and woollen goods, the increased exports followed the increased imports into India in 1890–91, holders having to dispose of their accumulated stocks; the regions on the shores of the Persian Gulf also had good harvests and good markets and the people were able to buy more goods.

The countries with which the trade is chiefly carried on are stated below:—

—	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
United Kingdom	1,178,757	1,063,392	1,094,027
Persia	1,225,603	1,319,957	1,418,522
Straits	271,830	259,772	246,399
East Coast of Africa, Zanzibar, and Mozambique	372,627	390,864	351,860
Arabia	222,214	243,255	303,486
Turkish Arabia	253,424	237,638	314,211
Aden	132,025	148,834	146,480
China	135,244	144,462	111,617
Ceylon	118,986	142,547	155,880
Mauritius	110,901	75,889	102,605

II.—*Exports of Indian Merchandise.*

The figures of this trade for the last ten years are as follow:—

—	—	Increase or Decrease.	—	—	Increase or Decrease.
	Rx.	Per cent.		Rx.	Per cent.
1882–83	80,598,155	+ 1·7	1887–88	86,370,022	+ 1·7
1883–84	85,085,720	+ 5·5	1888–89	92,642,735	+ 7·2
1884–85	80,313,208	− 5·6	1889–90	99,101,055	+ 7·0
1885–86	80,734,731	+ 0·5	1890–91	95,902,193	− 3·2
1886–87	84,908,995	+ 5·2	1891–92	103,550,831	+ 7·9

The trade of 1889–90 increased mainly as the result of a greatly augmented value of seeds, jute, and cotton. In the case of seeds and jute the increase was due to higher prices.

In 1890–91 these three articles gave greatly reduced values, the result in the case of cotton and seeds of a smaller quantity exported, and, in the case of jute, of a heavy fall in price accompanied by an increase in the quantity exported. The reduction in the value of these three articles amounted to nearly Rx. 4½ millions; the total reduction in the export trade being not quite Rx. 3,200,000. Of articles of the first importance only grain and pulse and cotton yarns and cloths gave improved results.

In 1891–92 the exports of cotton again fell off to an exceptionally low level, as the result of a very bad crop. The exports of jute also for the same reason fell to a lower point than has been known for six years, and, for the first time in the history of the trade, cotton yarns and cloth declined materially. There was also a decline in some minor articles. Compensating for this decline, an abnormally large trade was done in food-grains in consequence of the failure of the harvest in Russia and bad crops in other countries of Continental Europe, following a very severe winter.

In seeds also there was a large trade, and various other articles of importance exhibit more or less large increases. But for the traffic in food-grains, however, none of these increases would have balanced the decline in cotton, jute, cotton manufactures, and the other goods which fell off, and the year's accounts would have shown a decline on the total trade. The increase in food-grains was as much as Rx. 9,156,382, and the increase in the value of the aggregate trade of the year was only Rx. 7,648,638.

The following list of the principal articles gives the increase and decrease in value per cent. in each in the year:—

—	Increases.	—	Decreases.
Coffee	37·3	Cotton	34·8
Indigo	4·5	Cotton yarns and goods	8·6
Other dyes	33·3	Jute	9·9
Grain and pulse	46·3	Lac	3·9
Hides and skins	10·4	Saltpetre	3·7
Jute manufactures	1·2	Silk, raw	0·4
Oils	5·7	Silk manufactures	9·4
Opium	3·2	Spices	10·1
Provisions	22·0		
Seeds	30·6		
Sugar	21·7		
Wood and timber	9·2		
Wool	4·6		

In the following list the principal articles in the trade and their values for the last three years are shown (in Rx.) :—

	1889–90.	1890–91.	1891–92.
1. Grain and pulse	16,528,225	19,539,297	28,695,680
2. Seeds	10,627,553	9,343,252	12,208,457
3. Cotton, raw	18,668,404	16,502,775	10,754,311
4. Opium	10,115,936	9,261,814	9,562,261
5. Cotton yarns and cloth	6,753,743	7,702,639	7,035,036
6. Jute, raw	8,639,861	7,602,010	6,848,493
7. Tea	5,277,649	5,219,233	5,963,129
8. Hides and skins	4,524,260	4,695,919	5,186,002
9. Indigo	3,863,083	3,073,125	3,214,076
10. Jute manufactures	2,791,242	2,481,901	2,513,100
11. Coffee	1,489,872	1,454,985	1,998,659
12. Wool, raw	1,085,637	968,322	1,013,864
13. Provisions	624,424	633,377	776,531
14. Dyes (other than indigo)	683,288	573,640	764,709
15. Lac	488,513	781,443	751,224
16. Wood and timber	870,119	557,884	609,463
17. Oils	543,945	551,902	583,810
18. Silk, raw	639,818	521,069	518,627
19. Sugar	917,179	417,562	508,417

Grouping the items as in the trade returns, the values of the trade in each group for each of the last five years are as follows in Rx. :—

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
1. Animals, living	134,182	112,146	98,085	122,278	101,878
2. Articles of food and drink	23,829,697	24,841,910	25,354,123	27,785,219	38,456,954
3. Metals and manufactures of metal	54,943	53,523	63,273	61,144	77,019
4. Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials.	15,107,943	15,585,461	14,990,805	13,283,220	13,872,431
5. Oils	471,055	430,306	543,945	551,903	583,811
6. Raw materials and unmanufactured articles.	35,600,153	38,509,911	44,291,911	39,497,900	36,179,292
7. Articles manufactured and partly unmanufactured.	11,172,047	13,109,477	13,758,912	14,600,528	14,279,446

There are thus four great classes of exports, the most important of these last year being articles of food and drink, constituting 37 per cent. of the trade. The enormous increase in this class last year was mainly due to the abnormal demand for wheat in Europe.

The next is raw material, constituting 35 per cent. of the year's trade. This class has hitherto been the most important and would have remained so, but for the exceptional circumstances of the wheat trade and the failure of the cotton crop which caused a large decline in this head.

Then follow manufactured articles, constituting 13·8 per cent. of the year's trade. In this class there was a small decline resulting from the temporarily depressed condition of the trade in cotton yarns and manufactures.

Then follow chemicals, drugs, dyes and narcotics, constituting 13·4 per cent. of the trade. The increased value of this class, which includes opium, is due to a rise in the price of that drug.

The other three classes are of relatively no importance.

Articles of Food and Drink.

Coffee.—The exports of coffee have been as follows :—

	Cwt.	Rx.
1886–87	370,458	1,502,251
1887–88	273,775	1,529,680
1888–89	365,299	1,884,243
1889–90	239,795	1,489,872
1890–91	233,451	1,454,985
1891–92	311,864	1,998,659

Prices have continued to rule very high for coffee owing to various causes, especially deficient crops in Brazil and Java as well as in India, for two years. The crop in India was good last year, and the range of prices must have made a profitable year for planters, but the exports are still much smaller than they used to be. Much coffee land in India, as in Ceylon, has been given up for the cultivation of other staples. Thus, the exports of coffee from Travancore and Cochin have fallen gradually from $1\frac{1}{2}$ million pounds in 1886 to 183,000 lbs. in 1891, and the exports of tea have increased from 314,000 lbs. in 1888 to 773,000 lbs. in 1891.

Rice.—The total exports of rice from each province last year and in each of the nine preceding years are given below :—

Exports of Rice (husked) in Cwt. (000's *omitted*).

	Burma.	Bengal.	Madras.	Bombay.	Sindh.	Total for India.	Value Rx.
1882–83	21,249	7,838	1,319	552	71	31,029	8,440,091
1883–84	16,994	7,394	1,843	521	80	26,832	8,328,879
1884–85	13,507	6,035	1,403	677	80	21,702	7,122,787
1885–86	19,084	6,879	1,181	521	149	27,814	9,167,189
1886–87	18,216	5,902	1,564	639	139	26,460	8,764,809
1887–88	17,879	7,996	1,438	764	72	28,149	9,225,109
1888–89	14,205	6,417	1,538	589	19	22,768	7,845,350
1889–90	18,259	5,992	1,654	799	70	26,774	10,047,331
1890–91	24,581	7,928	1,210	646	109	34,474	12,773,628
1891–92	22,676	8,354	1,018	598	94	32,740	13,296,792

The increase in the decade in the quantity exported is only about $5\frac{1}{2}$ per cent.; indeed, until the last two years, which have been quite exceptional, it might have been said that the rice trade was making no advance. In 1890–91 a failure of the Japanese rice harvest not only for the time suspended the competition of that country in Europe and elsewhere, but required that rice should be imported into Japan from other countries, some quantity being sent from India.

In 1891–92 the failure of the European harvests suspended the competition there of the inferior grains which are used for distillation and the manufacture of starch, while prices in India rose to a very high level consequent on the demand in Europe and the inadequacy of the exportable supply, drought in Upper Burma and in some parts of India causing an unusually large demand.

The countries to which Indian rice was exported in the last three years are these :—

	Cwt. (000's omitted).		
	1889–90.	1890–91.	1891–92.
EUROPE :			
United Kingdom	5,177	4,299	5,135
Malta	953	2,317	1,640
France	207	134	47
Egypt	7,398	9,700	10,874
Germany	176	310	544
Other countries	66	49	7
Total	13,977	16,809	18,247
ASIA :			
Ceylon	3,270	3,711	4,145
Straits	3,916	6,451	4,180
Japan	Nil	1,308	Nil
Arabia and Aden	1,191	1,240	892
Persia and other countries	346	324	412
Total	8,723	13,034	9,629

	Cwt. (000's omitted).		
	1889–90.	1890–91.	1891–92.
AFRICA:			
Mauritius, Réunion, and Eastern Coast	2,014	2,328	2,072
Cape Colony and Natal	256	258	270
Total	2,270	2,586	2,342
AMERICA:			
West Indies	269	329	539
South America	1,426	1,493	1,796
Canada	53	75	73
United States	Nil	71	63
Total	1,748	1,968	2,471
AUSTRALIA	56	77	47

The countries which took largely increased quantities of rice were the United Kingdom, Germany, Ceylon, Egypt (the rice shipped to this last-mentioned place being to a large extent intended for other destinations ultimately), and South America.

For the Straits the demand was smaller, for, though the rice crop of Siam was a failure, the range of prices was too high to permit of a trade of the same magnitude as that of 1890–91.

Wheat.—Attention was drawn in the review of the trade of 1890–91 to the fluctuating character of the wheat trade, and it was anticipated that the exports of the year would be on an unusually large scale in consequence of the failure of the Russian harvests and of inferior harvests in France and Central Europe. In fact, for a few months speculation in the trade ran wild. Prices in England rose from 32*s.* 4*d.* a quarter in March 1891 to 41*s.* 4*d.* in the second week of May, reaching, after fluctuations, 41*s.* 8*d.* in September, and during this period an enormous and no doubt profitable business was done. Prices in England began to fall, however, when it was recognised that the United States and India were able to supply much more than the European deficiency, and that the prohibition of the export of wheat from Russia had been practically nullified by a most active trade in anticipation of the issue of the prohibitory order. The Gazette average price in March 1892 had fallen to 32*s.* a quarter, and prices in India meanwhile had risen as the demand became larger, and towards the end of the year the only business done was in fulfilment of standing contracts. The total quantity exported in the year amounted to over one and a half million tons (30,303,425 cwt.), as follows:—

	Tons.
From Bombay	721,540
„ Karáchi	556,250
„ Calcutta	237,346

The diversion of the main stream of the wheat trade is well illustrated in the circumstances of the year. In former years down to 1887 Calcutta on different occasions exported quantities varying from 333,000 to 380,000 tons; but last year, notwithstanding the peculiarly favourable conditions, not more than 237,000 tons were shipped from that port, or less than 16 per cent. of the trade, 84 per cent. having been shipped from Bombay and Karáchi.

Since the end of the year, with the prospect of fair harvests in Europe, and a reduction in the Gazette average price of wheat in England to the low figure of 29*s.* the quarter, the trade has lapsed into its normal condition. Unless the recent reports of another failure in the Russian harvest should be confirmed (and considering the low range of prices they do not seem to be credited) it is hardly likely that the exports of the current year will reach a million tons.

The exports of the year were directed as follows :—

	Cwt. (000's omitted.)
To the United Kingdom	12,345
„ France	6,024
„ Egypt	4,858
„ Belgium	4,655
„ Italy	1,062
„ Germany	663
„ Holland	523

The rest went in trifling quantities to other countries.

The subjoined table gives the exports of wheat from India for each of the last 11 years :—

——	From Bengal.	From Bombay.	From Sindh.	From Burma and Madras.	Total Exports.	Total Value.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Rx.
1881–82	6,668,047	11,328,585	1,852,334	14,554	19,863,520	8,604,081
1882–83	4,439,405	6,957,752	2,732,275	14,975	14,144,407	6,068,934
1883–84	7,611,535	8,970,603	4,372,832	1,525	20,956,495	8,877,561
1884–85	2,563,204	8,993,108	4,270,860	3,582	15,830,754	6,309,140
1885–86	4,189,672	10,608,680	6,241,017	21,150	21,060,519	8,002,350
1886–87	7,037,957	12,606,144	2,613,748	5,471	22,263,320	8,625,864
1887–88	4,334,768	8,541,621	660,758	1,022	13,538,169	5,562,373
1888–89	2,950,985	10,654,163	4,004,039	894	17,610,081	7,522,676
1889–90	1,550,839	5,146,881	7,100,282	1,222	13,799,224	5,791,377
1890–91	1,340,355	6,212,143	6,767,300	698	14,320,496	6,042,426
1891–92	4,746,938	14,430,808	11,125,000	679	30,303,425	14,380,462

Much misapprehension appears still to exist in regard to the conditions which have permitted the development of the wheat trade and in regard to the progress which it has made. It may be useful therefore to recapitulate the facts briefly. They are these : Until the opening of the Suez Canal no trade in wheat was possible, the cost and duration of the transit round the Cape having the double effect of making Indian wheat too dear for the European market and of spoiling it by giving weevils time to do their work of destruction. After the opening of the canal it was discovered that there was still an impediment to the trade in the existence of an export duty of three annas the maund, or say about five rupees the ton. On the representation of the Bombay Chamber of Commerce this duty was removed in January 1873. At that time the quantity exported was only 394,000 cwt., but with the removal of the duty it increased until it exceeded six million cwt. in 1877. The greatest part of the exports, however, was from Calcutta, for Bombay and Karáchi were not as yet linked by uninterrupted railway communication with the vast wheat fields of the North-Western Provinces and the Punjab whence are now drawn the largest part of the supplies available for export. Then followed the great famine of 1877, 1878, and 1879, raising prices in India to a level that interrupted the export business. With the return of plenty, a reduction of prices, the completion of railway communications, and consequently the reduction of cost of transport, trade was able to take its full development. In 1880–81 the exports were still under $7\frac{1}{2}$ million cwt.; in the following year they approached 20 millions. The trade in fact, owing to the circumstances here mentioned, really began only in 1881–82. Since then there has been no appreciable development. Until 1890–91 the exports were in three years only in some small excess over those of 1881–82, while in six years they were much below them. Last year's exports were abnormal, and it is unlikely that such circumstances will recur soon.

Considering the whole trade it may be said that the average quantity of wheat which Europe will take from us in ordinary times is not quite one million tons, and that we have not on the whole exceeded that quantity since we first supplied it ten years ago. There is in fact no foundation for the appeals to the growth of the wheat trade as indicating the effect which a low exchange has produced on the prosperity of the country. It would be more accurate to say, assuming for the moment that low exchange stimulates exports, that the wheat trade is not a proper illustration of the proposition, and it would be better for those who support the proposition to select some more favourable illustration.

Wheat-flour.—With the exports of wheat the exports of wheat-flour also largely increased.

The trade in this article is of recent origin, and its development in the last five years is of some interest. The exports have been as follows :—

	Lbs. (000's omitted)
1887–88	36,082
1888–89	36,290
1889–90	48,572
1890–91	47,036
1891–92	61,028

Until last year the exports were directed mainly to Aden and the African coast, but last year a good deal was sent to Europe and Egypt, about 7,300,000 lbs. altogether, the bulk of it being taken by Belgium.

Other Grains.—The demand in Europe for wheat, wheat-flour, and rice was accompanied by a demand for other grains also, especially jawar and bajra. The exports of these in the last five years have been as follows (in cwts.) :—

1887–88	640,705
1888–89	611,960
1889–90	932,572
1890–91	1,095,952
1891–92	1,572,882

Jawar and Bajra.—The demand for the jawar and bajra millets arose out of the scarcity and high prices of the inferior grains used for distillation, consequent on the Russian scarcity and prohibition of the export of rye. With maize, potatoes, rye, and oats costing high prices, these articles were too dear for distillation, and were used for human food, attention being turned to jawar and bajra as substitutes for distillation. For this purpose it is said that they were not a success, maize being more profitable even at a difference in price of two or three francs per kilogramme. For the feeding of poultry and birds these millets are regularly used in Europe, but the quantity so used is very limited. On the whole it is likely that the exports of the year will not be repeated on the same scale save under similar abnormal conditions. Of the exports as much as 825,000 cwt. were sent to Europe and Egypt.

Rice-bran.—Rice-bran, which is used for cattle feeding, was also shipped in greatly increased quantities from Burma to Europe with good profits to the shippers. Ordinarily this article is mainly shipped to the Straits, and doubtless, with the return of normal conditions, the trade will revert to its accustomed channels.

Sugar.—The subjoined figures show the export trade in sugar during the last ten years :—

——	Refined.	Raw.	——	Refined.	Raw.
	Cwt.	Cwt.		Cwt.	Cwt.
1882–83	111,274	1,207,424	1887–88	37,723	1,008,565
1883–84	203,693	1,426,827	1888–89	34,523	978,955
1884–85	55,323	1,015,596	1889–90	111,323	1,309,321
1885–86	24,942	1,142,598	1890–91	28,768	795,973
1886–87	33,340	953,066	1891–92	37,044	940,574

Even with the advantages which some people still suppose that a low exchange gives to the export trade, this trade is unable to compete in the external markets with the sugars of other countries, and even in the Indian market we are unable to exclude foreign competition, India importing much more sugar than she exports.

Tea.—The exports of tea amounted to 120,149,407 lbs., which was over 12 per cent. in excess of the quantity exported in the previous year. The present year may see a further advance.

The exports of the last ten years are given below :—

—	Lbs. (000's omitted.)	Rx.	—	Lbs. (000's omitted.)	Rx.
1882–83	57,766	3,699,406	1887–88	87,514	5,174,440
1883–84	59,912	4,083,880	1888–89	97,011	5,267,315
1884–85	64,162	4,044,759	1889–90	103,760	5,277,650
1885–86	68,784	4,306,133	1890–91	107,015	5,219,233
1886–87	78,703	4,727,992	1891–92	120,149	5,968,129

The heavy fall in price which marked the year 1889–90 was succeeded by a further fall in 1890-91 for the higher qualities of tea, the fall occurring during the months when exchange was rising. Prices fell again last year. The average prices realised at the auction sales in Calcutta during the last four years were as follow, in annas and pie per pound :—

—	1888–89.	1889–90.	1890–91.	1891–92.
Orange (and broken orange) Pekoe	12·4	11·8	11·2¾	11·1
Broken Pekoe	10·3	9·9	8·10¾	8·7½
Pekoe	8·1	7·5	7·2	7·0½
Pekoe Souchong	6·3	5·7	5·8¼	5·3½
Broken do.	5·10	5·0	5·3½	4·9⅝
Pekoe fannings	6·6	5·7	5·10	5·3½
Other low class	4·11	4·8	5·2	4·2½

The exports are in pounds (000's omitted) :—

—	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
United Kingdom	84,182	93,222	98,731	100,209	111,169
Australia	2,472	2,880	3,419	5,119	5,204
Persian Gulf	324	467	1,200	1,311	3,129
United States	54	155	103	79	83
Canada	—	14	85	61	102
China	6	19	33	61	51

The following are the imports from India, Ceylon, and China into England in the last eight years (quantity stated in lbs., 000's omitted) :—

—	From India.	From Ceylon.	From China.	—	From India.	From Ceylon.	From China.
1884	63,208	2,211	143,771	1888	89,874	22,509	105,735
1885	64,382	4,242	139,673	1889	95,584	32,673	88,558
1886	73,467	7,144	145,308	1890	101,771	42,491	73,743
1887	84,645	13,062	119,799	1891	109,638	61,900	62,284

From India and Ceylon were imported last year nearly three times as much tea as was imported from China. For the last six years the imports of Chinese tea have been steadily on the decline without a pause, and it may be said that the competition of that country is a thing of the past. The competition of Ceylon began just as the Chinese began to give way, and the Indian planter must make up his mind that he must continue to reckon with it. But there should be ample room in the world's markets for the teas of both India and Ceylon.

The increased exports to Persia are a very satisfactory feature. Attention has often been invited in these reviews to the expediency of working that market, which is capable of great development.

The comparatively large export to Australia was fully maintained, but unluckily financial necessities in Victoria, where most of our tea is consumed, have resulted in an increase of the import duty on tea from 1*d.* to 3*d.* a pound from last month (July), and as consumption was increased when the duty was reduced to a penny, so it is sure to be restricted now that it has been trebled.

Opium.—The exports of opium were :—

——	Chests.	Rx.	Average Value. Rs.	——	Chests.	Rx.	Average Value. Rs.
1882–83	91,798	11,481,376	1,251	1887–88	90,096	10,067,764	1,117
1883–84	91,963	11,294,460	1,228	1888–89	87,789	10,508,081	1,197
1884–85	86,578	10,882,606	1,257	1889–90	85,166	10,115,936	1,188
1885–86	87,956	10,735,518	1,220	1890–91	85,753	9,261,814	1,080
1886–87	95,839	11,077,669	1,155	1891–92	87,558	9,562,261	1,092

The price of Bengal opium improved, and the improvement since the end of the year has been marked and rapid. The price of Malwa opium on the other hand has further declined.

——	1889–90.	1890–91.	1891–92.
	Chests.	Chests.	Chests.
Exported from Bengal - - -	55,985	57,597	56,773
Do. Bombay - - -	29,181	28,156	30,785

Average price—

——	Bengal.	Bombay.
	Rs.	Rs.
1889–90	1,138	1,282
1890–91	1,038	1,165
1891–92	1,059	1,152

The exports were thus distributed :—

——	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
	Chests.	Chests.	Chests.	Chests.	Chests.
China : Hong Kong -	59,508	56,166	54,272	52,566	50,523
,, Treaty Ports -	17,307	16,725	15,830	18,289	20,282
Straits - -	12,368	13,995	13,749	13,915	15,035
Cochin-China -	670	725	1,050	480	880
Other countries -	243	178	265	503	838

Indigo.—The exports of indigo during the last ten years were as follow :—

——	Cwt.	Rx.	——	Cwt.	Rx.
1882–83	141,041	3,912,997	1887–88	139,644	3,890,649
1883–84	168,590	4,640,991	1888–89	142,447	3,948,594
1884–85	154,629	4,068,800	1889–90	157,116	3,863,084
1885–86	132,495	3,783,160	1890–91	118,425	3,073,125
1886–87	138,396	3,691,677	1891–92	125,327	3,214,076

During the last two years of drought the exports of indigo from Madras have fallen materially, and from Bengal they have not so materially increased as to cover the deficiency, while from Bombay and Sindh also exports have declined :—

——	Bengal.	Madras.
1889–90 - - - - -	91,835	53,889
1890–91 - - - - -	69,819	40,696
1891–92 - - - - -	98,075	19,718

Myrabolams and Cutch.—The exports of myrabolams increased largely, but the level reached was only a little in excess of that of 1889–90, and the trade continues to fluctuate within somewhat narrow limits. Cutch also somewhat improved, but remains much below the level of former years.

The trade in dyeing and tanning materials generally, apart from indigo, is small, the total value being only Rx. 765,000 last year. Practically they now consist only of cutch, myrabolams, and turmeric.

Raw Materials and Unmanufactured Articles.

Cotton.—The exports of raw cotton during the last eleven years have been as follow (in cwt., 000's omitted) :—

	Cwt.	Rx.		Cwt.	Rx.
1881–82	5,627	14,935,959	1887–88	5,374	14,412,842
1882–83	6,168	16,049,017	1888–89	5,331	15,045,647
1883–84	5,979	14,383,728	1889–90	6,320	18,668,404
1884–85	5,066	13,266,367	1890–91	5,914	16,502,775
1885–86	4,190	10,777,204	1891–92	4,425	10,754,311
1886–87	5,433	13,468,429			

This was one of the worst years for cotton that we have experienced. The crop was extremely deficient in quantity, and instead of prices rising with a short supply they fell heavily. The American cotton crop was unusually abundant, and on the Continent of Europe the depression of trade and manufactures was severe in consequence of the failure of the grain harvests. Prices fell to as low a point as they had reached for fifty years.

The exports of cotton in the last five years have been directed to the countries named below :—

	Cwt. (000's omitted).				
	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
United Kingdom	2,140	1,776	2,166	1,520	710
Italy	774	781	957	823	588
Austria	688	755	741	719	548
Belgium	676	873	941	907	670
France	487	549	635	688	509
Germany	139	190	486	810	745
Russia	134	150	94	82	53
Spain	45	72	72	115	61
Other Continental countries	37	9	7	11	12
China	202	139	125	119	110
Japan	—	—	61	78	401

There were exported last year over three million cwt. to the Continent, being between four and five times as much as was exported to England. As about half of the cotton sent to England goes thither only on its way to the Continent, it may be said that the English share of our exports is not more than about 12 per cent., the Continental share being 82 per cent. The remainder finds its way chiefly to China, Japan, and the Straits.

The centre of this important trade, both as regards manufacture and exportation of the raw material, is in Bombay, whence 80 per cent. of the exports were made last year :—

	Cwt. (000's omitted).				
	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
Bombay	3,929	4,198	4,819	4,562	3,544
Madras	658	595	862	847	594
Bengal	618	375	452	355	127
Sindh	131	130	144	121	150
Burma	37	32	42	28	10

Jute.—For jute also the year was a bad one, for the crop was very deficient, following on one of remarkable abundance.

The exports in the last ten years were as follows (cwt., 000's omitted) :—

	Cwt.	Rx.		Cwt.	Rx.
1882–83	10,349	5,846,926	1887–88	9,643	6,040,379
1883–84	7,018	4,592,635	1888–89	10,553	7,897,154
1884–85	8,369	4,661,368	1889–90	10,256	8,639,861
1885–86	7,782	4,355,362	1890–91	11,986	7,602,010
1886–87	8,307	4,869,815	1891–92	8,532	6,848,493

The declared export values of the last five years averaged—

	Rs.
1887–88	6·26 per cwt.
1888–89	7·5 ,,
1889–90	8·42 ,,
1890–91	6·34 ,,
1891–92	8·02 ,,

Prices ruled very high in Calcutta for a considerable time in 1889–90, falling towards the end of the year with a rising exchange and a higher range of freights. In 1890–91, with a very large export —the crop having been, it is said, the largest ever known owing to the stimulus to cultivation given by high prices as well as to a good season—prices fell, after much fluctuation, aided in doing so by a rapidly rising exchange during a part of the year. Last year with a very short crop prices again rose very high. This is always a very speculative trade, and speculation in it was at its height in Calcutta last year.

The destination of the jute has been as follows (cwt., 000's omitted) :—

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
United Kingdom	6,313	7,498	7,079	6,745	5,184
United States	2,331	1,682	1,804	2,716	1,573
Germany	351	684	652	1,433	950
France	54	161	233	295	218
Italy	266	184	223	305	186
Austria	183	203	110	317	149
Spain	124	104	113	137	63

Seeds.—Exports of seeds during the last eleven years have been—

	Cwt. (000's omitted.)	Rx.		Cwt. (000's omitted.)	Rx.
1881–82	10,466	6,054,099	1887–88	16,060	9,385,024
1882–83	13,139	7,200,336	1888–89	15,570	9,561,756
1883–84	17,355	10,083,758	1889–90	15,795	10,627,553
1884–85	18,251	10,745,203	1890–91	14,799	9,343,252
1885–86	17,280	9,948,350	1891–92	19,164	12,208,457
1886–87	15,866	9,198,560			

The trade in the principal kinds of oil-seeds was as follows in the last six years :—

	Cwt. (000's omitted.)					
	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
Castor	611	764	586	895	860	836
Earth-nuts	946	1,262	828	1,394	1,525	1,530
Linseed	8,657	8,423	8,461	7,147	8,077	10,866
Poppy	613	456	730	483	678	616
Rape	2,660	2,081	3,061	3,904	1,555	2,616
Til or jinjili	2,114	2,747	1,537	1,775	1,847	2,302

The year was a quite exceptionally good one for linseed, as it was for wheat. This seed and rape-seed are grown in the same season as wheat, in the same tracts, and often in the same fields as a border. The features in the trade of the year were the deficiency in Russian exports and the entry of the United States as a producer into the European markets. While the States thus sent their linseed to Europe in competition with ours, they declined to take our linseed of which previously they were large consumers, as observed elsewhere in this review under the head of America.

The other kinds of oil-seeds also did well, but in most cases it was merely a recovery from the depression of the preceding year. Ordinarily the trade in oil-seeds far exceeds in value the trade in wheat, but last year, even with such a good crop as there was of linseed, the exports of wheat were on such a phenomenal scale and prices rose so high that the value of the exports of oil-seeds was much smaller than that of wheat.

Of castor seed, earth-nuts, poppy-seed, mustard, and rape, France is the largest recipient of our exports. Of linseed England is the greatest consumer, though France also takes it largely,

Silk.—Exports of raw silk are as follow in lbs. (000's omitted) :—

—	Reeled.	Chasam (Waste).	Cocoons.	Total Value in Rx.
1883–84	673	885	44	627,612
1884–85	531	953	83	463,791
1885–86	358	1,024	57	332,251
1886–87	449	1,020	114	484,339
1887–88	453	998	173	480,811
1888–89	433	1,314	374	518,751
1889–90	593	1,233	263	639,818
1890–91	503	1,112	146	521,069
1891–92	519	1,012	131	518,627

Unfortunately there is nothing to be said about this trade except to repeat the regret often expressed that it seems unable to recover from the decadence into which it has fallen.

Teak Timber.—Exports of teak timber for the last eleven years :—

—	Cubic Tons.	Rx.	—	Cubic Tons.	Rx.
1881–82	56,377	506,792	1887–88	40,446	367,274
1882–83	59,187	611,260	1888–89	52,609	575,263
1883–84	46,471	525,447	1889–90	71,342	762,998
1884–85	47,556	532,129	1890–91	42,803	425,303
1885–86	50,076	550,515	1891–92	48,190	474,952
1886–87	23,946	223,154			

The heavy overstocking of the market with Siamese timber in 1890 led to a serious fall in prices in the early part of 1891. They recovered later, but not quite satisfactorily. The trade was limited in extent owing, it is said, mainly to the drought which left the rivers too low to float the timber down.

Wool.—The exports of wool have been as follow in the last five years :—

—	Lbs. (000's omitted.)	Rx.
1887–88	23,877	972,346
1888–89	21,961	968,753
1889–90	23,870	1,085,637
1890–91	21,345	968,322
1891–92	22,314	1,013,864

Indian wool is of such low quality that it is used only for the manufacture of the most inferior classes of goods, and even for them the demand is limited because it is troublesome to work owing to the admixture of hair and dirt in it. It is doubtful

whether the trade will increase appreciably unless a radical modification of the conditions is secured. It is susceptible of large expansion, and the matter is worth the attention of those who are concerned in the trade.

The latest returns of the woollen manufacturing industry in India show that there are five mills, employing a capital of Rx. 265,000 and 2,582 persons, with 532 looms and 17,210 spindles. Although the industry has made a large advance in ten years it is as yet quite unimportant, and the goods made are of the coarser kinds.

Articles Manufactured and partly Manufactured.

The following figures indicate the relative proportions of each principal class of manufactures and the progress made since 1881–82 :—

—	1881–82.	1890–91.	1891–92.	Increase or Decrease Per Cent. compared with 1881–82.
	Rx.	Rx.	Rx.	
Cotton yarn and cloth - -	2,010,516	7,702,640	7,035,036	+ 283·1
Jute goods - - -	1,097,589	2,481,961	2,513,100	+ 126·1
Silk goods - - -	221,617	203,181	183,957	— 8·3
Woollen goods - - -	196,683	104,166	94,788	— 47·04
Tanned hides and skins -	1,918,973	2,535,363	2,818,959	+ 32·1
Lac - - - -	709,256	781,264	750,531	+ 10·15
Coir goods - - -	182,114	194,801	244,929	+ 7·0
Apparel - - -	58,524	103,429	119,204	+ 76·7

Cotton Yarn.—For the first time the quantity of yarn exported shows a decline, after continued advance year by year, and the decline is not immaterial, being close on 5 per cent. The exports are as follows :—

—	Lbs. (000's omitted .)	Rx.	—	Lbs. (000's omitted.)	Rx.
1882–83	45,378	1,816,818	1887–88	113,451	4,077,386
1883–84	49,876	1,926,162	1888–89	128,907	5,207,100
1884–85	65,897	2,441,101	1889–90	141,950	5,748,732
1885–86	78,242	2,755,252	1890–91	169,275	6,543,364
1886–87	91,804	3,336,861	1891–92	161,253	5,771,033

To those who still suppose that this trade with China has been maintained simply because of the fall in exchange, the course of prices in Hong Kong of Bombay yarns (10's to 20's) may afford food for reflection. They are stated in dollars per bale :—

1880 - -	84·48	1886 - -	67·58
1881 - -	80·67	1887 - -	67·52
1882 - -	74·99	1888 - -	71·37
1883 - -	70·93	1889 - -	71·79
1884 - -	68·13	1890 - -	68·49
1885 - -	65·35	1891 - -	62·87

Between 1880 and 1891 the decline in price has amounted to 25½ per cent., and the decline in the rate of exchange has been 14½ per cent. The advantage derived from a low exchange is not therefore visible.

Cotton Piece-goods.—The diminution in the exports of cotton yarns did not extend to cotton piece-goods.

The exports of these in the same period have been (in yards, 000's omitted) :—

1882–83 - -	41,534	1887–88 - -	69,434
1883–84 - -	55,564	1888–89 - -	70,244
1884–85 - -	47,908	1889–90 - -	59,462
1885–86 - -	51,528	1890–91 - -	67,639
1886–87 - -	53,360	1891–92 - -	78,351

The distribution of the exports in the last two years has been as follows :—

	Yarn, Lbs. (000's omitted).		Piece-Goods, Yards (000's omitted),	
	1890–91.	1891–92.	1890–91.	1891–92.
China	151,050	145,558	5,538	7,351
Japan	11,876	6,682	17	—
Aden	1,852	2,251	12,685	11,764
Straits	2,045	3,987	5,498	6,318
Asiatic Turkey	943	941	1,306	2,789
Java	533	284	—	26
Arabia	299	440	2,643	3,209
Persia	324	392	930	1,715
East Coast of Africa (Mozambique and Zanzibar).	46	118	25,509	27,835
Abyssinia	—	4	3,940	1,773
Ceylon	265	46	6,533	6,692
Mekran and Sonmiani	42	7	1,062	1,537
Other countries		541	1,978	—

Of the yarn trade about 94 per cent. is carried on with China and Japan. Bombay piece-goods are taken to the extent of about 70 per cent. to the Asiatic and African littoral west of Bombay, and most of the remainder finds its markets in Ceylon and the Straits. As regards the use of Indian cottons in Zanzibar, the British representative there, in his report for 1891, draws attention to the preference given to American cottons. He says: "The chief reason for this is that the gruel (size) which is used in "the preparation of British Indian shirtings is absent from the American article. "The natives also say that the latter lasts the longer, whilst the former becomes thin "in the process of washing. The test which is applied is that of smell, so that if "some odourless substance were to be used in the preparation of the gruel, the British "goods would command as ready a sale as the American."

The progress of the spinning and weaving industry in the last ten years is shown in the table appended :—

Year.	Number of Mills.	Number of Spindles.	Number of Looms.
1882–83	62	1,654,108	15,116
1887–88	97	2,375,739	18,840
1890–91	125	3,197,740	23,845
1891–92	127	3,272,988	24,670

The mills are located as follows :—

	Mills.	Spindles.	Looms.
Bombay Presidency	87	2,322,716	18,583
Bengal (suburbs of Calcutta)	8	297,578	—
Madras	10	213,844	671
North-Western Provinces	5	137,802	2,110
Punjab (Delhi)	2	21,642	154
Central India (Indore)	1	26,036	464
Central Provinces	4	88,696	876
Hyderabad	3	52,232	609
Berar	1	17,636	214
Mysore	2	34,248	187
Pondicherry	2	27,074	552
Travancore	1	23,000	—

About 118,000 persons are stated to have been employed in the mills at the end of 1891–92, and the capital invested is returned at Rx. 11,182,000, but several of the mills, private concerns, make no return of their capital, the figures being confined to mills worked by joint stock companies.

In Bombay there were two mills less last year than in 1890–91; one was burnt and two closed, and one was opened.

Jute.—The value of the exports of manufactured jute in the last ten years has been :

	Rx.		Rx.
1882–83	1,487,831	1887–88	1,746,360
1883–84	1,334,145	1888–89	2,571,477
1884–85	1,543,870	1889–90	2,791,242
1885–86	1,130,808	1890–91	2,481,961
1886–87	1,151,858	1891–92	2,513,100

The exports of gunny-bags and cloths in the last ten years have been as follows, the quantities being stated in numbers for bags and yards for cloth, 000's being omitted in both cases :

	Bags.	Cloth.		Bags.	Cloth.
1882–83	60,738	4,601	1887–88	74,368	13,683
1883–84	63,646	7,049	1888–89	99,790	15,160
1884–85	82,779	15,344	1889–90	97,416	37,144
1885–86	63,760	20,154	1890–91	98,749	29,854
1886–87	64,570	12,799	1891–92	1,06,251	37,289

The statistics of the 25 jute mills in Bengal are as follow for 1891–92 :—

No. of looms	8,543
„ of spindles	171,134
„ of persons employed—daily average	65,000
Nominal capital	Rx. 3,104,500 (incomplete).

Tanned Hides and Skins.—The exports of tanned hides and skins (mainly from Madras) in the last five years have been as follow, most of the exports being to England :—

	Cwt.	Rx.
1887–88	272,449	2,526,666
1888–89	272,960	2,614,102
1889–90	260,716	2,524,008
1890–91	272,376	2,535,363
1891–92	290,401	2,818,959

The drought in Madras last year supplied the raw material for this trade cheaply and abundantly.

Lac.—The exports of shell and button lac declined somewhat after the great increase of the preceding year, but the trade still remained at a comparatively high level, the value being Rx. 750,531. The trade, as remarked last year, is very speculative and fluctuating.

CHAPTER IV.

Trade with Countries.

In the subjoined table are given the figures of our trade (merchandise only) with the several divisions of the world during the last two years :—

	1881–82.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
With Europe	92,955,279	115,044,358	117,156,569
With Africa and adjacent islands	4,570,435	9,632,186	12,388,786
With Asia	26,826,199	36,588,254	37,413,865
With America	3,512,379	6,429,218	6,402,423
With Australia	1,029,752	1,476,605	1,261,412
Total	128,894,044	169,170,621	174,623,055

During the year the trade with each of these divisions has increased in the following proportions :—

With Europe - - - -	1·8 per cent.
„ Asia - - - -	2·2 „
„ Africa - - - -	28·6 „

With America our trade decreased 0·4 per cent. and with Australia 14·5 per cent. The following table shows the value of the merchandise interchanged in the last two years with the principal countries with which we have commercial relations :—

	1890–91.	1891–92.		1890–91.	1891–92.
	Rx.	Rx.		Rx.	Rx.
1. United Kingdom -	84,857,056	82,812,412	13. Persia - - -	2,451,125	2,723,344
2. China—Hong Kong -	11,592,162	11,446,502	14. Japan - - -	1,270,458	1,360,950
„ Treaty Ports -	5,268,530	5,254,136	15. Turkey in Asia - -	931,961	1,352,253
3. France - - -	8,695,093	12,009,383	16. Arabia - -	1,268,607	1,301,281
4. Straits Settlements -	8,059,602	7,602,766	17. Australia - - -	1,476,605	1,261,412
5. Egypt - - -	4,630,909	7,310,940	18. Zanzibar, Mozambique, and other ports on the East Coast of Africa.	1,347,367	1,239,170
6. Belgium - - -	5,629,094	6,790,285			
7. Germany - - -	6,086,746	6,616,134			
8. United States - -	5,503,992	5,079,207	19. Russia in Asia - -	858,968	1,129,129
9. Italy - - -	4,131,841	3,538,308	20. Holland - - -	428,617	1,087,486
10. Ceylon - - -	3,381,720	3,595,541	21. South America - -	732,000	998,911
11. Austria - - -	3,582,676	3,020,102	22. Aden - - -	1,017,136	952,135
12. Mauritius - - -	2,870,796	2,980,913			

European Trade.

United Kingdom.—With several of the countries mentioned our trade in the year fell off more or less largely, the principal reduction being in the trade with the United Kingdom. Here there was a reduction of 2·4 per cent. Our exports to the United Kingdom exhibit a substantial increase, but imports declined by over 7 per cent., the decline being almost entirely due to the smaller importation of cotton yarns and manufactured goods to which reference has elsewhere been made. Generally it may be said that the variations in the imports from the United Kingdom, as from other gold-standard countries, in the last two years are to be attributed on the whole to the variations of exchange, sudden fluctuations in which necessarily affect trade for the time.

Many of our important articles of export to the United Kingdom declined. Cotton is steadily going in smaller quantities to that country, but the decline of 53 per cent. in quantity and 62 per cent. in value of last year's exports are specifically due to the very bad crop of Indian cotton and the superabundant crop of American cotton, factors which had the doubly injurious effect on the Indian cultivator of cotton of reducing the quantity he was able to put into the market and of lowering the price he obtained for it.

Indigo, jute, and jute manufactures are amongst the other articles which declined, while coffee, linseed, tea, wheat, and wool increased. Balancing increases against decreases, it appears that there would have been a substantial decline in the export trade if it had not been for the abnormal stimulus given to the exports of wheat by the failure of the European harvests.

In 1890–91 our trade with England represented just over 50 per cent. of our whole trade; last year it represented 47·4 per cent. In 1881–82 it was as much as 57 per cent. This does not mean that our trade with England has declined. It has increased, but much more slowly than our trade with many of the countries with which we trade.

Austria.—A material decline, due to the short crops of cotton and jute, the two principal articles we export to that country. The import trade somewhat exceeded the comparatively high level of 1890–91.

Belgium.—The imports from Belgium have grown rapidly year by year, until from Rx. 304,643 in 1887–88 they reached Rx. 1,324,027 last year, iron and steel representing about half the whole import trade. Coal-tar dyes, glass and glassware, and hardware and cutlery, represent the bulk of the rest of the imports.

In the export trade a heavy decline in cotton was much more than balanced by a great increase in wheat and seeds, with the result that the total value of exports rose from Rx. 4,648,609 in 1890-91 to Rx. 5,460,273 last year, an increase of over 17 per cent.

France.—There was a large increase in the imports, chiefly of apparel and silks, these forming more than half the trade; but the trade of 1890–91 has been on an unusually low scale.

The exports to France were unusually large, being about 38 per cent. in excess of those of the preceding year. The French harvest was extremely deficient, and large importations were made of Indian wheat, the increase under this head accounting for the bulk of the whole increase. There were also large increases in oil-seeds and in coffee, but, as with Belgium, a decrease in cotton and jute.

Germany.—The imports were not so large as in 1890–91, but in that year they were extraordinarily large. The growth of this trade has been still more noticeable than that of Belgium. It has risen from Rx. 194,492 in 1887–88 to Rx. 1,524,969 last year. The reason of the decline last year lies in a smaller importation of sugar; the trade in this article was undertaken on a remarkable scale in 1890–91, when the rise in exchange tempted holders of beet-sugar to attempt with India a more profitable trade than was possible with the low prices current in Europe. Imports of German salt continued on an increasing scale:—

	Tons.
1887–88	23,187
1888–89	7,711
1889–90	45,439
1890–91	60,540
1891–92	103,403

Apart from sugar and salt there are no articles in the import trade from Germany which are as yet individually of special importance, but the trade is very varied and miscellaneous in character. The principal articles are: apparel, cotton manufactures (mainly printed and dyed fabrics), coal-tar dyes, glassware, hardware and cutlery, beer and spirits, matches, iron and steel (chiefly the latter), paper, and woollen goods, these last being much the most important in the list. The trade in German woollens has increased in value in five years from under Rx. 60,000 to Rx. 293,000. It should, however, be borne in mind that it is impossible to say how much of the apparent increase in German trade (except sugar and salt) is a real increase, or what proportion of it represents a diversion in the course taken by trade which formerly reached India *viâ* England, and was therefore recorded as being trade with England.

In exports there was a large increase:—

	Rx.
1887–88	1,014,889
1888–89	1,493,278
1889–90	2,764,657
1890–91	4,387,482
1891–92	5,073,527

Cotton and jute declined heavily; but there was a large increase in coffee, indigo, rice, wheat, hides, and seeds.

Holland.—With Holland, as with Austria, Belgium, and Germany, our trade has largely increased in the last five years. Imports have risen from Rx. 3,929 to Rx. 155,415, and exports from Rx. 411,615 to Rx. 932,071. In 1890–91 the value of the exports was only Rx. 409,878; and it is doubtful whether the sudden increase in the year will be maintained; it was due exclusively to the unusual extent of the wheat and linseed trade, and the former at any rate will probably not continue.

Italy.—The value of the trade was smaller than it was even as far back as the year 1881–82, and the hopes that were entertained of a continually increasing trade between India and Italy have not been realised. The import trade has fluctuated considerably without making any material progress for years, and the export trade on the whole exhibits a declining tendency. Corals and glass beads, coloured cottons, silks, marble work (chiefly flooring-tiles), coal-tar dyes, apparel, and clocks and watches, are among the principal imports. But most of these are articles for which the Indian demand fluctuates within well-determined and narrow limits, and for the others the competition of other countries with Italy is keen and is carried on by them in practice in such a manner as to ensure success against Italian commercial enterprise.

The conditions which operate to prevent the successful competition in India of Italian commerce also operate in some degree to prevent the development of Indian exports to Italy, and in addition account must be taken of the effect of the Italian fiscal laws and tariffs. The rice trade gave some promise of development, but in consequence of a law passed in 1890 it has entirely ceased. The heavy duty on wheat also has greatly restricted that trade, and although the necessities of last year compelled the importation of about a million hundredweight, that quantity was only one-third of what was exported to Italy in 1887–88. Raw silk also does not increase for the same reason, though no doubt the better yield of Italian silks must have greatly affected this trade. Cotton, hides, jute, and seeds are the principal exports. These all declined in the year, cotton and jute for the reasons which affected the exports to all other countries, and the others for reasons peculiar to Italy where commercial depression has for some time been acute.

African Countries.

Egypt.—With the exception of Egypt, our trade with the African continent and with the islands on its eastern coast is of comparative small importance. The trade with Egypt is apparently considerable, but most of its importance is unreal, the bulk of the trade shown as with Egypt consisting of rice and wheat cleared from India to Port Said for orders for some European destination, the grain remaining in the vessel's hold until the destination is reached. Apart from this the trade consists mainly of some indigo, jute, gunny bags, and oil-seeds intended for consumption in Egypt or the Levant.

Imports from Egypt are on a very small scale, and are limited to a little apparel, tobacco (chiefly in the form of cigarettes), and raw silk. Latterly, however, there has been an increasing import of cotton for experimental working in the Bombay mills.

Zanzibar.—The greatest part of our trade is done with Mauritius and with Zanzibar, and with the latter country the trade last year fell off, the imports of cloves and ivory, the staples of the trade, having greatly declined. These two articles have hitherto been brought to Bombay whence a large proportion is shipped to Europe, but, with direct communications between Zanzibar and the West, it cannot be expected that this transit trade will increase. Much of the export trade is also transit trade, Bombay being the intermediary, and this trade also for the same reason can hardly be expected to increase. But on the other hand there is an increasing market for Bombay cottons in the East African markets as well as for a number of other Indian goods, and the trade in such goods, amounting last year to Rx. 412,428, will, it may be hoped, increase with the opening out of Eastern Africa.

Abyssinia.—The trade with Abyssinia consists chiefly of the export thither of jawar and bajra which has augmented largely in the last three years.

Mozambique.—To Mozambique we send cotton goods, Bombay and European, and rice, and receive therefrom a little ivory.

Mauritius.—From Mauritius we receive a very large quantity of sugar, practically all that is required for consumption in Western India, and we send thither all the goods,—food-grains, provisions, and cotton cloth,—required for the consumption of the large coolie population of the island, and gunny bags for the packing of the sugar.

Cape Colony.—Natal.—Cape Colony takes from us rice, gunny bags, and teak wood. So does Natal, with the addition of oils and provisions, and other things required by the coolies. The trade with both colonies is increasing.

American Countries.

United States.—The imports from the States now consist practically of the following articles:—

	Value in 1891–92. Rx.
Mineral oil, chiefly kerosine	1,084,148
Cotton piece goods (grey)	55,193
Tobacco	20,584
Clocks and watches	10,299

Of kerosine oil the imports have steadily declined during the last three years, the oil being apparently unable to maintain its place against the cheaper Russian oil which is coming to India now in larger quantities than the American oil. If this competition should continue successfully for another few years, and the American oil be pushed out of the market, it is evident that the value of the imports from the United States will be reduced to an insignificant figure, for it represents 90 per cent. of the whole imports, and has done so for ten years past.

Exports to the United States have remained for five years at a fairly steady figure, not reaching Rx. four millions at any time and averaging a little over Rx. 3¾ millions, last year's trade being Rx. 3,872,593. There was a heavy decline in the export of jute, common to all countries, and a large increase in the exports of gunny bags and cloth, due no doubt to the ample yields of wheat and cotton in the States. But the marked feature in the returns is the decline in the linseed trade, the exports falling from 797,000 cwt. in 1890–91, to 125,000 cwt. last year. The average quantity exported in previous years was well over 700,000 cwt., and probably the destruction of the trade may be due to the increase of the import duty, under the new tariff of 1890, from 20 cents to 30 cents the bushel. As the United States exported a considerable quantity of linseed in 1891 to Europe, it is possible that the increase in the import duty so stimulated the cultivation as to enable the country not only to dispense with Indian linseed, but with the surplus to compete with our linseed in Europe.

South America.—The trade is limited to the export of rice for the coolies on the sugar plantations and of gunny bags for the packing of the sugar. There was a large increase in both, the total value of the trade amounting to Rx. 996,418.

Countries in Asia.

Aden.—The principal imports to Aden are salt and ivory and both decreased, imports of salt being only 33,969 tons against 36,662 tons in the preceding year. Exports of Bombay and European cotton goods also declined.

Arabia.—Imports and re-exports increased; exports declined, mainly because the prices of our rice, wheat, and other food-grains were high and the people had no need for them in a season which was one of fair conditions.

Ceylon.—The cocoanut and the betelnut are the staple articles of the import trade from Ceylon. Of the cocoanut and its products (copra, coir, and oil) the value of the imports was last year Rx. 208,914, and of betelnuts Rx. 160,221, making together Rx. 369,135 out of a total import value of Rx. 669,777. Of other articles produced in Ceylon these are only worth mention: cardamoms, Rx. 32,566; coffee, Rx. 12,582; tea, Rx. 40,763; and shells and cowries, Rx. 15,153. Colombo, however, is also a depôt for Indian and European goods required at Tuticorin and the other smaller ports of Southern India, for example, gunny bags and cotton goods. The increase in the imports of tea is noticeable, but it has been treated elsewhere in this review.

Exports to Ceylon largely consist of rice, flour, salted fish, oilcake, cotton goods, chillies, and sugar. The total value of the trade was Rx. 2,769,883, an increased quantity and higher price of rice bringing it up to this relatively large level.

China.—Imports from China increased from Rx. 2,420,295 to Rx. 2,877,138, due mainly to an increase in copper and raw and manufactured silk, which form the largest part of the trade.

Exports to China, on the other hand, fell from Rx. 14,295,934 to Rx. 13,711,883, the decrease being due to the inactive condition of the trade in Bombay yarns and a great fall in their values. The quantity exported fell from over 151 million pounds to 145½ millions, and the value from Rx. 5,794,193 to Rx. 5,161,716. But the trade appears now to be recovering from the depression of last year. Of opium a slightly smaller quantity was exported, 70,805 chests against 70,855 chests, but the values were higher, totalling Rx. 7,803,855 against Rx. 7,729,641.

Japan. Our exports to Japan indicate a radical modification of conditions in that country. The Japanese used to take our yarn for weaving, but they are now working spinning mills of their own, and instead of taking our yarn they are taking our raw cotton to feed their mills. The change which has occurred will be evident from the

subjoined figures of the exports of raw cotton and cotton yarns for the last five years:—

—	Raw Cotton.	Cotton Yarn.
	Cwt.	Lbs.
1887–88	125	17,391,646
1888–89	390	23,143,460
1889–90	60,837	22,686,714
1890–91	77,757	11,376,422
1891–92	400,952	6,682,050

It is stated, however, that the Japanese mills have not been established or worked on a sound business basis, and that they are in financial difficulties aggravated by earthquakes. If these difficulties are not removed the exports of yarn may revive, and since the end of the year there has been some recovery; but the export of raw cotton continues on a greatly increasing scale.

Java.—The feature in the Java trade of the year was a marked increase in the imports of sugar, of which we received about 128,000 cwt., and of tea, of which over 216,000 lbs. were imported. The sugar is intended for consumption in India, where it competes with Indian and foreign sugars, but the tea is all re-exported to the Persian Gulf, competing with Indian and Chinese tea. For the first time in five years we sent a quantity of rice direct to Java.

Persia.—The only feature in the Persian trade of the year requiring notice is the large increase in the export of the Indian tea. The exports of foreign and Indian tea for the last five years are as follows:—

—	Foreign.	Indian.
	Lbs.	Lbs.
1887–88	1,245,526	263,073
1888–89	2,148,808	402,488
1889–90	1,673,175	1,118,126
1890–91	2,973,817	1,221,478
1891–92	3,115,691	2,789,175

The neglect of this market for Indian tea, lying as it does at our doors, has often in previous years been the subject of comment in these annual reviews, and it is very satisfactory to see that at length the opening has been seen and advantage taken of it. It is to be hoped that the market will now be firmly held, and the trade rapidly increase.

Russia.—The trade with Russia is confined to the import of petroleum, and its remarkable development has elsewhere been noticed. The imports arose last year from 19,843,423 gallons, to 28,333,635 gallons, value for Rx. 1,128,986. Five years ago only five million gallons were imported, and the first imports were made six years ago, in 1886–87, amounting to 1½ million gallons only. This is extraordinary progress to have made in competition with the United States.

Straits.—There was an increase in imports from the Straits, due mainly to a large importation of coffee, and a heavy fall in exports arising out of a restriction in the quantity of rice taken by the Straits. The rice harvest in Siam and the Archipelago was a comparative failure in 1890–91, and rice was taken then from India in unusually large quantities.

Turkey.—From Turkey, which had a good harvest, the high prices ruling in India attracted an exceptional quantity of wheat and other grains, and with them came also large quantities of dates and ghi. The import value consequently rose from Rx. 362,045 to Rx. 570,193.

Export values correspondingly increased from Rx. 332,264 to Rx. 467,849, people who had surplus stocks of foodstuffs and were able to sell them at high prices to India, having taken our Bombay cottons and indigo in comparatively large quantities.

Australia.

Imports from Australia continue insignificant and are still practically limited to horses, copper and coal. The endeavours to find an Indian market for Australian cheese seem to have failed; it is said that the cheese will not keep. Australian wines are also a failure in India, and colonial flour and provisions generally do not appear to be able to hold the market. Wool was imported in larger quantity than in previous years, but it is doubtful whether the Indian woollen mills will, within any measurable distance, be able to afford to use this expensive article in weaving to any very large extent.

Exports of Indian tea hardly increased, 5,118,714 lbs. having been exported in 1890–91, and 5,203,995 lbs. in 1891–92. Gunny bags and castor-oil were exported in smaller quantities, as also rice, and the total value of the export trade was lower than it has been for five years, having fallen from Rx. 1,219,037 to Rx. 967,739. The depression of trade in the colonies during the year was great.

Trade through the Suez Canal.

The value of the trade (including Government stores) carried through the Canal in 1889–90 was Rx. 130,611,300, being 68 per cent. of the whole trade; in 1890–91 the value was Rx. 132,190,000, or about 67½ per cent. Last year it was Rx. 135,249,000, being 69 per cent. of the whole. The proportion for imports was about 78½, and for exports about 62 per cent.

CHAPTER V.

Provincial Trade.

The figures of the trade of each province stand thus (in Rx.):—

Imported Merchandise.

——	1890–91.	1891–92.
Bombay	27,543,173	25,760,606
Bengal	26,080,318	25,346,863
Madras	6,219,325	6,003,935
Burma	5,489,739	5,503,802
Sindh	3,702,344	3,972,250

Exported Merchandise.

——	1890–91.	1891–92.
Bombay	37,859,465	40,635,690
Bengal	37,259,267	39,941,001
Madras	10,714,371	10,037,976
Burma	9,602,861	10,082,526
Sindh	4,699,757	7,338,816

Taking imports and exports of merchandise together, the foreign trade of each province stood as follows during the last two years in Rx.:—

——	1890–91.	Per-centage on whole Trade.	1891–92.	Per-centage on whole Trade.
Bombay	65,402,638	38·66	66,396,296	38·09
Bengal	63,339,585	37·44	65,287,864	37·96
Madras	16,933,696	10·01	16,041,911	9·18
Burma	15,092,600	8·92	15,586,328	8·92
Sindh	8,402,101	4·97	11,311,066	7·05

Thus there was an increase in the trade of every province except Madras, where drought and distress prevailed. The increase, however, was in exports alone in Bombay and Bengal. The proportion of the trade of each province to the whole trade of the country offers no noticeable deviation from the average except in the case of Sindh, the abnormal export in wheat having caused Karáchi to advance rapidly in relative importance. In the present year, however, with a reduction in wheat exports to a normal level, the trade will probably recede.

The trade and navigation of India with foreign countries have been distributed during the last five years in the following proportions between the five chief ports. Treasure is included in the trade here :—

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
TRADE.					
Bombay	43·37	44·03	43·95	43·82	41·58
Calcutta	35·87	35·6	34·04	34·08	35·1
Rangoon	5·9	5·2	5·76	6·45	6·57
Madras	5·44	5·3	5·58	5·38	5·96
Karáchi	3·2	4·26	4·53	4·41	4·74
Total	93·78	94·39	93·86	94·14	93·95
SHIPPING.					
Bombay	33·23	35·22	31·48	31·33	32·9
Calcutta	24·44	25·41	24·74	23·61	23·64
Rangoon	10·82	10·1	10·9	12·80	11·12
Madras	8·05	7·22	8·26	7·87	8·85
Karáchi	5·65	6·71	7·76	8·03	7·7
Total	82·19	84·66	83·14	83·64	84·21

The following figures show the actual extent of the foreign trade of the largest ports of India in merchandise only, imports and exports (including re-exports), during the last five years in Rx. :—

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
Bombay	59,654,600	65,292,300	65,748,000	65,731,600	66,351,980
Calcutta	58,955,800	62,288,200	63,112,400	61,750,600	63,933,101
Rangoon	9,897,700	9,310,000	10,893,700	12,437,600	12,614,528
Madras	8,800,100	9,296,700	10,339,300	10,020,700	8,917,973
Karáchi	5,186,800	7,377,200	8,405,700	8,402,100	11,310,986
Tuticorin	1,613,900	1,655,100	2,264,700	2,036,000	1,648,226

The increase of trade during this period in these ports has been at the rate mentioned below :—

Bombay	11·23 per cent.
Calcutta	8·44 „
Rangoon	27·45 „
Madras	1·34 „
Karáchi	118·07 „
Tuticorin	2·13 „

GOVERNMENT STORES.

The total value of these transactions was Rx. 3,126,008, being fractionally in excess of the preceding year. These transactions range between Rx. $2\frac{3}{4}$ and $3\frac{1}{4}$ millions, the fluctuations depending mainly on the progress of railway construction by the State. The imports last year were lower than in the preceding year, for though there was an increase in arms and ammunition, there was also a decrease in railway stores. The increase in the total of the year was occasioned by larger exports of silver to Aden and the reshipment of certain arms to England.

Customs Revenue.

The gross sum received on imports (excluding salt) since 1887–88 was as follows:—

——	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.	Rx.	Rx.
Arms and ammunition	22,370	26,089	23,867	28,047	31,730
Malt liquor	13,179	15,205	17,439	17,325	18,659
Cider and other fermented liquor	133	151	219	180	205
Spirits	462,935	482,854	492,371	533,385	518,838
Liqueurs	6,077	6,456	6,943	6,859	7,434
Wines	45,468	43,618	42,294	43,151	44,450
Opium	255	306	285	325	349
Mineral oil	13,709	117,489	162,392	165,040	174,662
Imports by post, &c.	135	159	133	139	132
Total gross revenue	564,261	692,327	745,943	794,451	796,459
Total net revenue	549,781	676,284	724,116	774,269	771,487

The net export for the same years (levied only on rice) was—

	Rx.
1887–88	739,065
1888–89	597,956
1889–90	705,721
1890–91	900,647
1891–92	857,502

A decline in the revenue from spirits and a larger payment of refunds and drawbacks on re-exported goods brought the net import revenue below that of the preceding year.

The export revenue was also smaller, as was anticipated, for though the exports of rice were large they did not equal those of 1890–91 which, for exceptional reasons, took abnormal proportions.

The total revenue (net) from imports and exports was—

	Rx.
1887–88	1,288,846
1888–89	1,274,240
1889–90	1,429,837
1890–91	1,674,916
1891–92	1,628,989

the revenue of the year being about $2\frac{3}{4}$ per cent. below that of 1890–91.

CHAPTER VI.

Balance of Trade.

The excess of exports over imports, including treasure as well as merchandise, for each of the last ten years was (Rx.):—

——	Including Government Transactions.	Excluding Government Transactions.	——	Including Government Transactions.	Excluding Government Transactions.
1882–83	18,978,300	20,925,500	1887–88	13,317,800	15,774,700
1883–84	21,029,100	23,521,000	1888–89	15,548,400	18,266,400
1884–85	15,634,600	18,059,700	1889–90	18,709,700	21,219,400
1885–86	13,855,800	17,626,300	1890–91	8,440,700	11,253,200
1886–87	17,359,900	20,398,400	1891–92	27,305,232	29,869,077

Thus the excess of exports, which was abnormally small in 1890–91, was as abnormally large in 1891–92, both the results following the fluctuations of exchange which affected trade in a contrary sense in each of the two years. The average of the two years is about equal to the normal average.

In the same period the drawings of the Secretary of State in Council Bills have been—

——	Pounds.	Exchange.	Rx.	——	Pounds.	Exchange.	Rx.
		Pence.				Pence.	
1881–82	18,412,429	19·895	=22,191,400	1887–88	15,358,577	16·899	=21,812,400
1882–83	15,120,521	19·525	=18,586,000	1888–89	14,262,859	16·379	=20,899,100
1883–84	17,599,805	19·536	=21,621,400	1889–90	15,474,496	16·565	=22,418,700
1884–85	13,758,909	19·308	=17,102,400	1890–91	15,969,033	18·089	=21,186,900
1885–86	10,292,692	18·254	=13,532,500	1891–92	16,093,854	16·733	=23,082,800
1886–87	12,136,279	17·441	=16,700,300				

the average being 14,606,702*l.* = Rx. 19,694,250.

Gold and Silver Coin and Bullion.

The imports and exports during the last ten years were—

Gold :—

——	Imports.	Exports.	Balance Net Imports.	——	Imports.	Exports.	Balance Net Imports.
	Rx.	Rx.	Rx.		Rx.	Rx.	Rx.
1882–83	5,095,100	164,200	4,930,900	1887–88	3,236,100	243,600	2,992,500
1883–84	5,469,400	6,900	5,462,100	1888–89	3,119,100	305,200	2,813,900
1884–85	4,778,100	106,200	4,671,900	1889–90	5,071,000	455,700	4,615,300
1885–86	3,091,500	328,600	2,762,900	1890–91	6,500,800	864,600	5,636,200
1886–87	2,833,600	656,500	2,177,100	1891–92	4,118,900	1,705,100	2,413,800

Silver :—

1882–83	8,358 000	877,800	7,480,200	1887–88	10,589,800	1,361,100	9,228,700
1883–84	7,408,500	1,003,400	6,405,100	1888–89	10,725,900	1,479,200	9,246,700
1884–85	9,110,000	1,864,400	7,245,600	1889–90	12,388,500	1,450,600	10,937,900
1885–86	12,386,200	779,600	11,606,600	1890–91	15,433,600	1,258,500	14,175,100
1886–87	8,219,700	1,064,000	7,155,700	1891–92	10,603,700	1,581,500	9,022,200

The net imports of gold last year were very small, and those of the preceding year very large. The average of the two years is slightly in excess of the average of the eight previous years: Rx. 4,024,996 against Rx. 3,803,375.

The average net imports of silver in the last two years is much in excess of the average of the preceding eight years, being Rx. 11,598,600 against Rx. 8,663,300. The imports of silver in 1890–91 were much above the requirements of the country, and the banks were unable to find employment for all the money at their disposal. The imports in that year were speculative, holders of silver hastening during the time when exchange suddenly ran up to a high figure to sell their silver in the Indian market and exchange the proceeds for gold by drafts on London. The imports have continued on an unnecessarily large scale, because when holders of silver saw the price of the metal drop after the temporary and speculative rise, they lost confidence, and hastened to sell their silver in India and convert it into gold before the price went down still further. This process was assisted by the suddenness and swiftness with which the fall went on. For a short time, as exchange continued falling and the demand for wheat continued on an extensive scale, the export trade was in a feverishly active condition, and imports of merchandise being for the time unprofitable, silver was imported instead. When the time came for the adjustment of prices and of trade relations to the altered conditions of exchange, all this ceased, and normal conditions were resumed. But the results manifested themselves in banks overflowing with silver for which there was no call in agricultural, industrial, or trading operations, and the rate of discount for over two years remained and still remains at an unprecedentedly low level, while Government securities and other easily realisable paper, bought for the purpose of giving some employment for money not required otherwise, attained extraordinarily high prices.

Since 1859–60 the net imports of the precious metals have been—

——	Gold.	Silver.
	Rx.	Rx.
From 1859–60 to 1872–73	72,606,200	117,224,200
From 1873–74 to 1890–91	53,307,300	144,184,600
Total - -	125,905,500	261,408,800

Thus India has taken a little more than twice as much of silver as of gold in this period, but it will be observed that since 1873 the proportion of gold has sensibly diminished. Between 1859 and 1873 the ratio was as 1 : 1·6 ; since 1873 the ratio has been as 1 : 2·7.

The average annual net import has been as follows :—

——	Gold.	Silver.
	Rx.	Rx.
From 1859-60 to 1872–73	5,186,157	8,373,157
From 1872–73 to 1891–92	2,805,647	7,588,663

Gold is imported in the form of bars and sovereigns, also as leaf-gold from China. The following statement of the kinds of silver received at the Bombay and Calcutta Mints shows the different forms in which it is mainly received :—

Description.	1890–91.	1891–92.	Description.	1890–91.	1891–92.
	Ozs.	Ozs.		Ozs.	Ozs.
London silver - - -	9,371,089½	7,798,554	Old sicca rupees from local sources.	197,527½	- -
Australian silver - -	1,604,621	1,265,400	B. 1, Government clipped, dulled, cut, and soldered rupees.	3,437½	3,000
American „ - -	4,538,335	5,108,886			
Genoa „ - -	1,793,239	618,527			
San Francisco „ - -	48,662	158,518			
Paris „ - -	—	35,803½	Nagpur coins - - -	—	7,147½
Bar silver (country not stated).	290,606	—	Holkari „ - -	—	2,160
			Nadari „ - -	1,654	—
Sycee silver - -	5,205,912	3,888,421	Persian „ - -	937½	—
Mexican dollars - - -	3,914,695½	669,882	Turkish „ - -	337½	—
Mexican chopped dollars -	7,945,581	3,973,112	Kutch koris - -	292,983½	127,980
Roumanian 5-lei pieces -	3,563,596½	—	Jam Shahi „ - -	1,185½	450
Peruvian dollars - -	49,687½	—	Devan Shahi „ - -	3,100½	6,208
Japanese yens - -	2,006,217½	—	Rana „ „ - -	210	—
Argentine Republic coins -	85,312½	105,375	Rhopal rupees - -	469,455	—
Maria Theresa dollars -	919,462	23,926	Broach „ - -	6,542	5,865
Country silver and ornaments	269,069	263,619	Baroda „ - -	2,156	1,239
Cake silver from local sources	1,391½	832		42,587,004	24,064,905

CHAPTER VII.

Shipping.

The total number and tonnage of the shipping, steam and sailing, with cargoes and in ballast, which entered from and cleared to foreign countries during each of the last five years, are as follow :—

Year.	No.	Tons.	Average Tonnage.
1887–88	10,893	7,189,465	660
1888–89	10,485	6,983,332	666
1889–90	10,673	7,315,586	685
1890–91	11,023	7,684,954	697
1891–92	11,158	8,590,651	770

Steamer tonnage represented 81 per cent. of the whole. The total number of steamers which entered and cleared was 4,497, with an aggregate burden of 6,966,241 registered tons, the average tonnage of each steamer being 1,549 tons. About 4 per cent. of the steamers which cleared left in ballast.

Of the 4,497 steamers, 2,311 passed through the Suez Canal, their tonnage (4,431,824 tons) being 51 per cent. of the whole.

Of the total of 8,590,651 tons, the entries from and clearances to the United Kingdom were 2,850,564, or under 33 per cent., against 34·6 per cent. in 1890 91. The proportion has been falling for some years. Entries from and clearances to British possessions have also slightly declined, from 2,781,647 tons to 2,676,044 tons. There was a very large increase in the number and tonnage of vessels entered from and cleared to foreign countries.

——	No.	Tons.
1890–91	2,852	2,243,652
1891–92	3,537	3,064,043

The relative proportions of tonnage entered and cleared were as follows:—

From and to the United Kingdom, about 33 per cent. of the whole.
„ „ British Possessions „ 31 „ „
„ „ Foreign countries „ 35 „ „

The increase in the tonnage of trade with foreign countries was due mainly to the augmentation of trade with France and Germany, Russia in Asia (the petroleum trade), and Egypt, whence large numbers of vessels entered in ballast, after leaving coal at Port Said, to take away wheat and rice, especially the former.

But though the tonnage of vessels trading direct between India and the United Kingdom and British Possessions has diminished, the vessels carrying Indian trade for the greater part fly the British flag, the tonnage of vessels sailing under that flag representing 83 per cent., against 82·4 per cent. of the whole in 1890–91.

The tonnage of vessels under foreign flags was only 11 · 3 per cent. of the whole against 11 · 5 per cent. in 1890–91.

The proportion of tonnage of vessels under British Indian registry was only about 3 · 4 per cent. of the whole. These are all sailing vessels of small tonnage.

The total number of vessels under foreign flags which entered and left last year was 1,366 against 1,206 in 1890 91, their burden aggregating 976,848 tons against 884,684 tons. The principal flags were:—

——	1889–90.		1890–91.		1891–92.	
	No.	Tons.	No.	Tons.	No.	Tons.
German	138	180,996	167	253,665	203	309,262
Italian	114	177,200	100	159,876	90	167,926
Austrian	100	181,939	93	164,759	98	165,530
French	121	116,404	126	110,714	130	99,773
Norwegian	68	61,877	42	41,516	85	78,201
Arab	620	79,994	496	68,950	529	72,591
American	31	44,043	27	38,391	23	30,914

The large increase of tonnage under the German flag is noticeable.

The native craft employed in the foreign trade were as follows:—

——	No.	Tons.
1890–91	3,523	169,607
1891–92	3,202	171,149

The shipbuilding industry in India is of the smallest dimensions. The numbers built last year were as follows :—

—	Steamers.		Sailing Vessels.	
	No.	Tons.	No.	Tons.
In Bengal	1	80	7	1,034
In Bombay	—	—	44	1,110
In Sindh	—	—	5	252
In Madras	—	—	25	670
In Burma	—	—	4	170
Totol	1	80	85	3,236

SECTION II.—TRANS-FRONTIER TRADE.

CHAPTER VIII.

The trade of the last three years across the land frontier of India was :—

—	Imports.	Exports.	Total.
	Rx.	Rx.	Rx.
1889–90	3,493,997	3,446.654	6,940,650
1890 91	3,758,333	3,142,905	6,901,238
1891–92	4,240,822	4,053,630	8,294,453

As explained in the review for 1890–91, arrangements were made for the exclusion from the returns of the trade carried over the Sind-Pishin railway, such trade being mainly internal, not external. The figures given above give the railway trade only so far as it reached the railway or left it at the frontier. Hence they do not correspond with the figures given in preceding returns.

The increase in 1891–92 is largely nominal on account of the change here made. The figures for Kandahar and for Zhob and Loralai are those which have been substituted for the whole railway figures, and if these are omitted for the present from the totals the figures of the rest of the trade compare thus :—

	Rx.
1889–90	6,916,622
1890–91	6,882,619
1891–92	7,235,927

which shows an increase of Rx. 353,308 or a little over 5 per cent. in the year. Most of the increase was due to a recovery in the trade with Kabul and Kashmir, partial in the former case and complete in the latter.

As the conditions under which the trans-frontier trade is carried on are not always adequately appreciated, it may be convenient to reproduce here the remarks on the subject made in the review for 1890–91 :

"But if the conditions are considered, the rate of increase in our frontier trade is not so disappointingly slow as it appears at first sight. Our foreign trade by sea is facilitated in every possible way : means of transport are easy, cheap, and abundant ; our ports are easy of access, and every danger is minimised by careful conservancy, by the provision of lights, buoys, beacons, and pilots ; the railways which cross the country have their termini in close proximity to the steamers which now carry the bulk of our trade ; the trade is largely conducted with the civilised nations of the West which are as anxious on their side as we are on this to facilitate the operations of commerce ; and at least half of our whole trade is conducted with a country (the United Kingdom) whose fiscal policy is the most liberal of any country in the world, India excepted.

"All these conditions are non-existent and reversed in the case of our frontier trade. Transport is as difficult as it is costly ; we are shut out from almost all our neighbours by a vast mountain barrier extending from Quetta to the Malay Peninsula ; across

this barrier trade is in most cases carried by rugged and painful mountain paths, by men and women, by camels, by oxen, ponies, mules, even by sheep and goats; in the higher regions the passes are snowed up and impracticable for five or six months in the year; in many places the routes, which degenerate into tracks beyond British territory, are made unsafe by tribes who prey upon the peaceful trader crossing their country and who praise their own moderation when the trader is allowed to pass with the loss of only a portion of his property; when the trader does finally reach his destination it is not to find a civilised people desirous of encouraging trade; in most cases he finds himself harassed by petty officials here and there whom he has to bribe if he wishes to escape any portion of the extortionate transit dues levied on his goods at station after station throughout his journey; and finally, his customers are poor, their conditions of life primitive, their wants few, much trade has to be done by barter, and facilities for exchange are almost entirely absent.

"When the conditions of the frontier trade are thus contrasted with those of the seaborne foreign trade the limited extent and comparatively slow progress of the former need excite no surprise. It is, indeed, perhaps surprising that it is as large as it is and that it advances at all. Hereafter, if we can see roads and railroads made over the main trade routes crossing our frontiers, we may expect in due course that augmentation of trade which has always followed the provision of facilities for intercourse in India. But until then we must rest satisfied if the trade continues small and slowly increases."

The following figures give the trade with each principal country in the last three years in Rx.:—

	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
Lus Bela	61,910	77,378	67,428
Khelat	75,368	67,058	54,439
Kandahar	24,028*	18,619*	972,659
Zhob and Loralai	— †	— †	85,866
Sewestan	153,194	142,639	162,113
Kabul	1,128,719	668,507	871,759
Tirah	20,167	20,188	22,673
Bajaur	165,421	186,889	182,815
Kashmir	1,228,283	1,126,127	1,312,123
Ladakh	47,543	62,712	53,017
Thibet	146,790	119,017	180,237
Nepal	2,874,986	3,149,663	3,003,619
Sikkim	25,031	27,380	34,714
Bhutan	44,450	42,128	55,812
Hill Tipperah	35,910	43,855	49,680
Western China	53,349‡	162,184	150,874
Siam	159,110	137,136	119,815
North Shan States	227,292	345,631	388,626
South Shan States	21,559	48,151	45,902
Karenni	195,095	188,471	228,766
Zimmé	222,181	232,512	227,393

* These figures are quite defective. The greatest part of the trade carried by rail was recorded simply as "Trade on the Sind-Peshin Railway" and was not assigned to Kandahar specifically as it is now.
† Similar remarks apply to the trade with these tracts.
‡ Figures defective, registration having commenced only in June.

In general the trade is, as might be expected from the existing conditions above described, of a trifling and peddling character. The only relatively important trade is with Kandahar, Kabul, Kashmir, Nepal, and the countries on the eastern border of Burma (Western China, Siam, the Shan States, Karenni, and Zimmé). The trade of Burma with these last-mentioned countries amounted altogether to Rx. 1,010,000.

Kandahar.

Imports amounted to Rx. 460,484, of which about half was represented by raw wool and the bulk of the other half by fruits and nuts. Three-fifths of the exports consist of cotton piece-goods, foreign and Indian, the former being twice as large as the latter.

Kabul.

The trade of the last eleven years has been as follows in Rx. :—

——	Imports.	Exports.	Total.	——	Imports.	Exports.	Total.
1881–82	276,355	838,926	1,115,281	1887–88	237,526	574,890	812,416
1882–83	312,867	574,328	887,195	1888–89	187,335	526,798	714,133
1883–84	249,332	521,111	770,443	1889–90	332,202	796,517	1,128,719
1884–85	238,393	469,103	707,496	1890–91	208,637	459,870	668,507
1885–86	229,307	536,746	766,053	1891–92	218,120	653,639	871,759
1886–87	257,366	636,349	893,715				

The average for this period has been :—

	Rx.
Five years ending 1885–86 - -	849,294
Five years ending 1890–91 - -	843,498
1891–92 - - - - -	871,759

The trade has therefore practically been stagnant during this period. The reasons were fully explained in the review for 1890–91, and it is unnecessary to repeat them. The facts then stated exist now, and until the conditions are greatly modified it is not possible to hope for material advance.

Of the exports to Kabul the principal are cotton piece-goods, indigo, sugar, and tea. The figures appended give the exports in the last six years of cotton goods :—

——	European.		Indian.	
	Cwt.	Rx.	Cwt.	Rx.
1886–87	15,768	217,235	25,243	165,071
1887–88	19,260	270,874	19,967	128,360
1888–89	15,269	209,236	18,591	120,865
1889–90	25,169	380,349	26,013	191,152
1890–91	15,493	211,699	13,456	95,793
1891–92	22,381	315,683	19,799	138,590

The next important article, and indeed the only other one of real importance, is tea. The following figures show the condition of this trade :—

——	Foreign.		Indian.	
	Cwt.	Rx.	Cwt.	Rx.
1886–87	12,434	134,496	3,655	15,721
1887–88	6,529	70,147	2,180	12,027
1888–89	8,662	89,415	2,333	10,661
1889–90	8,424	88,052	2,655	16,468
1890–91	4,479	44,304	4,429	22,900
1891–92	7,003	67,415	6,285	30,140

Indian cotton goods do not seem to make progress, probably because Russian goods compete successfully, but Indian tea is doing well apparently.

Kashmir.

The trade of the last six years has been as follows in Rx. :—

——	Imports.	Exports.	Total.
1886–87 - - - -	487,659	426,174	913,833
1887–88 - - -	537,284	525,831	1,063,115
1888–89 - - - -	502,265	485,565	987,830
1889–90 - - - -	578,681	563,845	1,142,526
1890–91 - - - - -	543,204	565,173	1,108,377
1891–92 - - - -	596,788	656,467	1,253,255

Amongst the largest imports from Kashmir are ghi, timber, and woollen goods, of which shawls now form but an insignificant item, but it is doubtful whether the sudden decline in the value of shawls from Rx. 70,830 to Rx. 8,525 in three years is real. It is more likely that these articles escape registration. It was stated in the review for 1890–91 that there had been an unaccountable omission to register the trade passing over the Sialkot-Jamu line of railway. This has since been rectified, and it is probable that the increase shown in imports and exports in the present year arises out of that omission. The increase in the exports is under the head of manufactured goods (unspecified), and, although the large increase which has taken place since the beginning of last year in the numbers of Europeans resident in the valley for the summer would necessarily cause a large export of manufactured goods for their consumption, it is not unlikely that part of the increase is only apparent and not real.

Nepal.

The imports and exports of merchandise for the last six years are :—

	Imports.	Exports.
	Rx.	Rx.
1886–87	1,669,738	860,639
1887–88	1,644,006	1,120,148
1888–89	1,388,086	1,100,910
1889–90	1,542,114	1,258,025
1890–91	1,719,548	1,285,397
1891–92	1,557,525	1,333,998

The bulk of the trade of Nepal crosses the Behar border. The value of the trade of the last three years was as follows, in Rx. :—

	1889–90.	1890–91.	1891–92.
Imports into North-Western Provinces	484,516	568,990	633,783
„ Bengal	1,057,558	1,150,558	923,742
	1,542,114	1,719,548	1,557,525
Exports from North-Western Provinces	362,358	337,594	374,751
„ Bengal	895,667	947,803	959,246
	1,258,025	1,285,397	1,333,997

The importation of food-grains, mostly rice, has fallen from 2,871,295 cwt. to 1,729,579 cwt. During the two years, 1889–90 and 1890–91, the imports of grain were very large under the stimulus of good harvests in Nepal and high prices in British India. Then, however, came a failure of the crops in Nepal from drought, followed by a prohibition of exports according to immemorial Oriental practice. The Government of Bengal says that the prohibition was rigorously enforced from November 1891, when it became clear that the winter rice had failed.

There was a largely increased export of salt from Bengal to Nepal, the trade rising from 85,132 cwt. to 139,261 cwt. It appears that the supply of salt, which is in the hands of the Nepalese Darbar, was obtained from Thibet for the higher tracts of the country, the lower (Terai) region being supplied from Bengal. The salt was bartered by the Thibetans for rice, but they raised the rate at which it was exchanged, and the Nepal Darbar also complained that the salt was not of good quality. The Darbar also desired to stop the export of rice, and decided that the barter with the Thibetans should cease, and that for the future Sambhar salt should be bought in India. Hence the increased exports.

Western China.

In the review for 1890–91 the following remarks were made :—" Imports last year " were valued at Rx. 53,435, the principal imports being raw silk and orpiment. " Exports were valued at Rx. 108,749, the principal export being raw cotton. Very little " cotton cloth or yarn is exported as yet, but these will perhaps follow in due course. " When the country along the border is more settled and the caravan routes safer " from the attacks of murdering and plundering savages it may be hoped that the

" trade will largely increase, unless the Chinese provincial official steps in to interfere " with and check it." There is no indication as yet of the development of this trade. Imports and exports were both smaller than in 1890–91, being Rx. 46,336 and Rx. 104,539 respectively. The raw silk and orpiment imported both declined as well as the raw cotton which forms the staple of the export trade. There was, however, a promising increase in the export of cotton piece-goods.

Karenni and Zimmé.

The trade practically consists of the import of teak timber floated down the Salween river :—

	From Karenni.		From Zimmé.	
	Tons.	Rx.	Tons.	Rx.
1886–87	79,746	315,483	49,073	123,211
1887–88	75,797	345,790	65,102	224,040
1888–89	92,558	521,629	63,881	303,182
1889–90	11,739	75,946	25,164	126,605
1890–91	35,894	148,573	29,990	116,459
1891–92	41,743	173,539	29,125	133,607

The re-imposition of the 7 per cent. duty had the effect of bringing all available timber down before the duty took effect on 1st April 1889, and for the same reason stocks on hand were cleared before that date. The trade does not seem to have revived since then.

SECTION III.—COASTING TRADE.

CHAPTER IX.

The total coasting trade of India, imports and exports, merchandise and treasure, was in the last eleven years—

	Rx.		Rx.
1881–82	53,058,534	1887–88	60,738,634
1882–83	57,326,755	1888–89	60,166,070
1883–84	61,461,631	1889–90	59,211,043
1884–85	58,401,555	1890–91	65,586,392
1885–86	57,598,286	1891–92	67,896,004
1886–87	56,165,363		

The increase was about 3½ per cent.

In the coasting trade, imports into one Indian port being exports from another, the actual value of the trade may be taken to be about the mean between the two, or either the import or export value may be taken to represent the actual value of the trade. Taking the export value, the trade of the last three years compares thus, in Rx. :—

	1889–90.	1890–91.	1891–92.
Merchandise (Indian)	20,602,449	22,416,965	23,468,875
„ (foreign)	6,570,235	6,566,577	6,829,130
Treasure	1,651,528	2,236,590	2,727,792

The figures do not include exports of Government stores or treasure, which last year were valued at—stores Rx. 761,700, just about the same as in 1890–91, and treasure Rx. 1,734,555.

It was observed in the review for 1890–91 that the export of foreign goods is relatively unimportant, most of the imports from foreign countries being distributed through the country by rail and river, and a somewhat full account of the nature of the trade was given. It is unnecessary therefore to repeat remarks to which nothing new can be added, and the present account will be confined to a description of the particular features of the year as regards the distribution of Indian merchandise.

Indian Merchandise.

The following are the recorded values of the exports in each of the past five years :—

	Rx.
1887–88	20,917,114
1888–89	20,954,550
1889–90	20,602,449
1890–91	22,416,965
1891–92	23,468,875

The principal articles in the trade are mentioned below, in the order of their importance, and placed against them are their import values in the last three years, that is, the value of the imports into British Indian ports :—

	1889–90.	1890–91.	1891–92.
	Rx.	Rx.	Rx.
1. Grain and pulse	3,623,702	4,494,350	4,641,335
2. Cotton, raw	3,984,187	5,429,809	3,657,586
3. Cotton manufactures, including twist and yarn	1,753,704	2,016,576	2,195,275
4. Jute manufactures	1,231,946	1,525,141	1,800,649
5. Spices	1,384,095	1,314,806	1,248,503
6. Seeds	976,335	1,163,681	1,180,536
7. Cocoa-nuts and kernel	721,496	748,529	999,269
8. Salt	738,652	905,368	945,242
9. Provisions	719,810	817,548	830,881
10. Teak timber	850,828	943,323	789,746
11. Jute, raw	1,164,136	918,360	761,091
12. Oils	630,862	624,895	731,126
13. Tobacco	459,407	500,590	650,666
14. Sugar	653,662	619,936	634,724
15. Hides and skins	470,841	460,214	514,173
16. Coffee	371,303	356,608	420,640
17. Spirits	347,015	342,347	397,733
18. Timber and wood, other than teak	420,692	405,808	394,134
19. Tea	132,628	112,508	253,820
20. Coal	104,046	148,858	192,001

The apportionment of the import trade in Indian merchandise between the different provinces will be seen from the figures of the two last years given below :—

	1890–91.		1891–92.	
	Imports.	Exports.	Imports.	Exports.
	Rx.	Rx.	Rx.	Rx.
Bengal	4,817,113	6,430,702	4,660,262	7,112,178
Bombay	13,242,527	7,937,410	11,666,548	8,267,473
Sindh	764,111	1,164,904	932,314	1,165,557
Madras	4,331,027	4,673,459	5,233,201	4,959,526
Burma	3,426,332	2,210,489	3,854,665	1,964,140

The following are the most noticeable articles in the trade. The remarks under each explanatory of the conditions of the trade need not be repeated from the review of the trade of 1890–91.

Coal.—The coal trade has further increased from an import of 90,393 tons to 113,108 tons, of which 72,418 tons were taken by Burma.

Cotton.—There was a heavy decline in the cotton trade owing to the deficient crop, as already explained in the review of the foreign trade.

Cotton Yarn and Manufactures.—In the yarn trade the stagnant condition of the foreign markets gave an impetus to the efforts of the Bombay mill-owners to find larger home markets, and the imports into all provinces increased from 26,596,000 lbs. to 33,333,000 lbs., Bengal in particular taking largely augmented quantities. In woven goods, on the other hand, there was a certain decrease after a very active and perhaps overdone trade in the preceding year.

Grain and Pulse.—The grain and pulse trade was second in the list in 1890–91, cotton standing first. Last year it was first and cotton stood second, owing to the

deficient cotton crop and to the great demand for food-grains by the Madras districts suffering from drought and distress. The imports of food-grains into Madras during the last three years are as follows :—

	Cwt.
1889–90	3,040,011
1890–91	5,173,829
1891–92	6,328,805

about five-sixths of the imports being rice, husked and unhusked.

Gunny Bags.—The activity of the wheat and rice trade demanded a large supply of bags in Bombay, Sindh, and Burma, and the total imports of gunny bags rose from 54,468,000 to 65,278,000.

Tea.—The tea trade has largely increased in the year, the imports into Bombay having taken great extension. In the last five years they have been :—

	Lbs.
1887–88	492,699
1888–89	761,205
1889–90	1,157,970
1890–91	877,029
1891–92	3,690,447

This sudden import into Bombay, mainly from Bengal, results from the increase of the trade in Indian tea from Bombay to Persia, to which reference is made under the head of the foreign trade in this review. It is to be hoped that it will continue to increase.

Coasting Shipping.

The following table gives the number and registered tonnage of the vessels engaged in the coasting trade during the last five years (000's omitted in tonnage) :—

Entered.

——	Steamers.		Sailing Vessels.		Native Craft.	
	No.	Tons.	No.	Tons.	No.	Tons.
1887–88	7,342	7,310	3,237	332	184,104	3,164
1888–89	7,316	7,246	3,241	245	185,659	3,089
1889–90	7,847	7,643	2,959	227	182,155	3,006
1890–91	8,751	8,673	2,565	202	166,113	2,826
1891–92	8,863	9,161	2,774	217	160,294	2,700

Cleared.

1887–88	7,308	7,238	3,301	314	166,928	2,955
1888–89	7,307	7,213	3,370	252	167,221	2,953
1889–90	7,844	7,617	3,066	233	165,673	2,881
1890–91	8,759	8,717	2,550	193	153,824	2,682
1891–92	8,862	9,099	2,636	196	149,785	2,555

As in the preceding year, the increase of trade was accompanied by a corresponding increase in the number of the steamers employed in the trade. There was also, unlike the preceding year, an increase in the number of sailing vessels. In native craft, on the contrary, there was a decline in both numbers and tonnage, and, though still very numerous, they are gradually being superseded by steamers whose tonnage amounts now to over 76 per cent. of the whole.

J. E. O'CONOR.

Simla,
August 24th, 1892.

TABLES

RELATING TO

THE FOREIGN SEA-BORNE TRADE

OF

BRITISH INDIA.

TABLES

RELATING TO

THE FOREIGN SEA-BORNE TRADE OF BRITISH INDIA.

NOTE.—*The Values throughout the following Tables represent Tens of Rupees.*

No. 1.

VALUE of the TOTAL TRADE.

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
Imports:					
PRIVATE MERCHANDISE	62,384,813	66,570,318	66,560,121	69,034,900	66,587,457
GOVERNMENT STORES	2,619,799	2,870,149	2,637,368	2,940,470	2,844,926
TOTAL MERCHANDISE	65,004,612	69,440,467	69,197,489	71,975,370	69,432,383
TREASURE	13,825,856	13,844,960	17,459,501	21,934,486	14,722,662
TOTAL IMPORTS	78,830,468	83,285,427	86,656,990	93,909,856	84,155,045
Exports:					
PRIVATE MERCHANDISE:					
INDIAN PRODUCE AND MANUFACTURES	86,370,022	92,642,734	99,101,054	95,902,193	103,550,831
FOREIGN DITTO	4,101,440	4,335,437	4,295,808	4,233,529	4,485,179
GOVERNMENT STORES	72,193	71,361	63,536	91,626	137,582
TOTAL MERCHANDISE	90,543,655	97,049,532	103,460,398	100,227,348	108,173,592
TREASURE	1,604,624	1,784,347	1,906,322	2,123,178	3,286,686
TOTAL EXPORTS	92,148,279	98,833,879	105,366,720	102,350,526	111,460,278
Total Trade	170,978,747	182,119,306	192,023,710	196,260,382	195,615,323

No. 2.

VALUE of TOTAL TRADE, distinguishing the PROPORTION passing through the SUEZ CANAL.

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
Imports:					
MERCHANDISE:					
VIÂ SUEZ CANAL	52,819,306	58,154,531	56,516,593	60,110,342	57,523,489
„ OTHER ROUTES	12,185,306	11,285,936	12,680,896	11,865,028	11,908,894
TOTAL	65,004,612	69,440,467	69,197,489	71,975,370	69,432,383
PER-CENTAGE VIÂ SUEZ CANAL	81·25	83·75	81·68	83·51	82·84
TREASURE:					
VIÂ SUEZ CANAL	8,595,740	8,537,488	12,754,113	12,752,226	8,571,942
„ OTHER ROUTES	5,230,116	5,307,472	4,705,388	9,182,260	6,150,720
TOTAL	13,825,856	13,844,960	17,459,501	21,934,486	14,722,662
PER-CENTAGE VIÂ SUEZ CANAL	62·17	61·66	73·05	58·13	58·22
Exports:					
MERCHANDISE:					
VIÂ SUEZ CANAL	51,142,039	57,133,271	60,792,741	58,429,936	67,330,576
„ OTHER ROUTES	39,401,616	39,916,261	42,667,657	41,797,412	40,843,016
TOTAL	90,543,655	97,049,532	103,460,398	100,227,348	108,173,592
PER-CENTAGE VIÂ SUEZ CANAL	56·48	58·87	58·76	58·29	62·24
TREASURE:					
VIÂ SUEZ CANAL	299,269	368,616	547,819	897,579	1,822,960
„ OTHER ROUTES	1,305,355	1,415,731	1,358,503	1,225,599	1,463,726
TOTAL	1,604,624	1,784,347	1,906,322	2,123,178	3,286,686
PER-CENTAGE VIÂ SUEZ CANAL	18·62	20·68	28·74	42·25	55·46
Total Trade:					
VIÂ SUEZ CANAL	112,856,353	124,193,906	130,611,266	132,190,083	135,249,003
„ OTHER ROUTES	58,122,394	57,925,400	61,412,444	64,070,299	60,366,320
TOTAL	170,978,747	182,119,306	192,023,710	196,260,382	195,615,323
PER-CENTAGE VIÂ SUEZ CANAL	66·01	68·19	68·02	67·35	69·14

No. 3.

VALUE of IMPORTS of MERCHANDISE from PRINCIPAL COUNTRIES into British India.

COUNTRIES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–62.
UNITED KINGDOM		49,042,488	52,576,440	50,291,140	52,101,868	48,271,400
BRITISH POSSESSIONS :						
Europe :	Gibraltar	8,193	7,753	8,957	9,221	14,261
	Malta	5,852	7,232	6,461	7,784	5,386
Asia :	Aden	114,232	141,375	131,136	129,575	126,966
	Ceylon	633,599	554,379	632,119	713,383	669,777
	China, Hong Kong	2,097,282	1,530,433	2,008,0 9	1,968,839	2,241,602
	Straits Settlements	2,119,600	2,278,414	2,441,4 0	2,300,338	2,358,598
Africa :	Cape Colony	4,723	461	8?1	822	1,566
	Mauritius	1,550,374	1,575,048	1,735,0?2	1,701,695	1,719,872
	Natal	790	1,028	703	416	1,674
America :	Canada	0	0	325	21	4,341
Australia (including Tasmania and New Zealand)		484,809	294,111	391,732	249,718	287,315
		7,019,454	6,390,234	7,356,765	7,081,812	7,431,358
FOREIGN COUNTRIES :						
Europe :	Austria	770,933	768,386	703,716	832,795	839,407
	Belgium	304,643	526,698	873,827	976,759	1,324,027
	France	849,016	914,334	975,647	815,824	1,041,679
	Germany	194,493	248,016	563,912	1,691,649	1,524,969
	Greece	38	369	177	130	275
	Holland	3,929	11,715	9,469	18,739	155,415
	Italy	370,993	504,797	510,508	492,711	535,906
	Norway	3,481	1,793	14,848	26,782	44,956
	Portugal	124	319	665	362	587
	Russia	0	50	48	0	15
	Spain	0	609	285	104	541
	Sweden	22,928	2,175	7,577	3,664	18,921
	Turkey	1,691	1,024	1,990	1,801	833
Asia :	Arabia	356,738	340,093	373,570	290,707	353,297
	China, Treaty Ports	317,853	381,404	441,402	451,456	635,537
	Japan	29,580	23,836	28,127	57,672	65,746
	Java	46,101	3,172	14,551	58,915	144,052
	Maldive Islands	15,760	21,025	19,174	10,168	18,111
	Mekran and Sonmiani	85,485	88,991	106,934	86,139	113,587
	Persia and Persian Gulf	637,431	730,957	803,916	710,182	709,992
	Philippines	5,463	2,959	4,165	4,098	1,725
	Russia	227,300	834,790	741,922	858,968	1,129,129
	Siam	1,313	24,742	38,513	30,703	22,280
	Sumatra	22,219	3,989	1,341	111	294
	Turkey	275,903	376,850	440,609	362,046	570,193
Africa :	Abyssinia	507	6,312	3,346	5,692	5,985
	Egypt	72,406	78,403	75,898	87,306	91,282
	Madagascar	2,143	3,190	3,410	4,154	5,631
	Mozambique	72,509	73,631	59,755	28,810	26,504
	Réunion	200	1,629	141	368	935
	Zanzibar	593,370	568,474	359,806	412,673	291,723
America :	South America	1,835	33	1,243	1,448	2,099
	United States	1,030,280	1,040,318	1,729,156	1,522,365	1,199,458
	West Indies *	710	36	0	295	0
Other countries		5,496	18,525	2,568	6,124	9,608
		6,322,871	7,603,644	8,912,216	9,851,220	10,884,699
TOTAL IMPORTS		62,384,813	66,570,318	66,560,121	69,034,900	66,587,457

* British and Foreign Possessions are not shown separately for the West Indies.

No. 4.

VALUE of EXPORTS of INDIAN PRODUCE and MANUFACTURES to PRINCIPAL COUNTRIES from British India.

COUNTRIES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
UNITED KINGDOM		33,852,248	36,250,572	37,950,864	31,691,797	33,446,985
BRITISH POSSESSIONS :						
Europe :	Gibraltar	75,491	73,233	64,096	28,270	19,654
	Malta	282,612	378,068	307,713	713,913	625,482
Asia :	Aden	745,486	688,939	749,769	738,727	678,689
	Ceylon	1,983,216	1,933,056	2,195,241	2,525,790	2,769,883
	China, Hong Kong	10,192,482	10,854,944	10,686,691	9,484,374	9,099,480
	Straits Settlements	3,823,815	4,072,307	4,536,746	5,499,505	4,997,769
Africa :	Cape Colony	85,094	155,333	184,981	129,757	202,497
	Mauritius	1,011,556	683,511	1,015,581	1,093,212	1,158,437
	Natal	117,296	122,348	217,091	126,490	216,759
	St. Helena	4,052	15,270	8,416	981	60
America :	Canada	60	927	21,699	26,224	52,840
Australia (including Tasmania and New Zealand)		1,110,873	1,088,250	1,063,489	1,219,037	967,739
		19,432,033	20,066,186	21,051,513	21,586,280	20,789,289
FOREIGN COUNTRIES :						
Europe :	Austria	2,722,048	3,040,638	2,960,484	2,745,479	2,174,645
	Belgium	3,161,553	4,663,800	5,641,048	4,648,609	5,460,273
	Denmark	53,815	0	0	0	0
	France	7,167,848	8,410,444	7,714,867	7,842,268	10,945,575
	Germany	1,014,889	1,493,279	2,764,657	4,387,482	5,073,527
	Greece	22,424	17,482	10,698	11,931	15,149
	Holland	411,616	337,137	358,705	409,788	932,071
	Italy	4,505,246	3,470,113	4,217,755	3,627,870	2,985,457
	Norway	0	950	0	0	0
	Portugal	8,153	2,668	12,094	24,587	22,314
	Russia	470,958	535,760	412,414	336,950	240,759
	Spain	262,095	310,675	342,979	410,835	227,126
	Sweden	1,200	12,995	16,155	25,190	19,315
	Turkey	41,473	6,407	17,144	22,546	13,609
Asia :	Arabia	782,915	677,905	825,146	734,646	644,498
	China, Treaty Ports	2,761,613	3,169,613	3,114,786	4,811,560	4,612,403
	Japan	711,994	1,035,305	1,218,998	1,210,276	1,289,787
	Java	16,823	25,291	31,729	34,122	62,728
	Maldive Islands	37,348	30,675	25,713	16,629	23,326
	Mekran and Sonmiani	44,636	33,701	40,288	49,345	50,010
	Persia and Persian Gulf	360,718	303,748	497,102	420,986	594,829
	Philippines	16	755	3,690	31,266	50,868
	Siam	49,039	89,705	62,154	62,931	41,810
	Sumatra	2,089	1,312	672	871	1,437
	Turkey	276,638	289,808	298,814	332,264	467,849
Africa :	Abyssinia	85,816	35,526	121,637	257,628	244,345
	Egypt	3,202,598	3,483,800	3,869,974	4,499,097	7,181,460
	Madagascar	2,785	4,279	4,193	246	230
	Mozambique	99,686	105,624	128,821	124,363	133,692
	Réunion	131,686	142,213	171,650	227,899	136,695
	Zanzibar	282,542	282,573	416,830	365,525	412,428
America :	South America	418,079	495,186	782,892	730,153	996,418
	United States	3,722,059	3,589,255	3,736,324	3,968,735	3,872,593
	West Indies*	170,858	122,544	131,978	166,550	266,895
Other countries		82,485	105,565	146,286	85,489	120,436
		33,085,741	36,325,976	40,098,677	42,624,116	49,314,557
TOTAL EXPORTS		86,370,022	92,642,734	99,101,054	95,902,193	103,550,831

* See note on p. 51.

No. 5.

VALUE of EXPORTS of FOREIGN (including BRITISH and COLONIAL) MERCHANDISE to PRINCIPAL COUNTRIES from British India.

COUNTRIES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
UNITED KINGDOM		1,191,704	1,222,362	1,178,757	1,063,391	1,094,027
BRITISH POSSESSIONS :						
Europe:	Gibraltar	567	290	85	1,118	3,509
	Malta	5,437	6,157	5,757	7,156	6,637
Asia:	Aden	155,882	187,454	132,025	148,834	146,480
	Ceylon	94,250	123,414	118,986	142,547	155,880
	China, Hong Kong	136,335	122,867	133,145	138,949	105,420
	Straits Settlements	351,911	300,149	271,830	259,759	246,399
Africa:	Cape Colony	720	1,200	4,221	455	894
	Mauritius	89,812	112,102	110,901	75,890	102,605
	Natal	12,127	30,092	29,219	8,345	18,380
	St. Helena	0	0	0	100	0
America:	Canada	0	150	0	2	1
Australia (including Tasmania and New Zealand)		13,661	8,233	8,710	7,850	6,359
		860,702	892,108	814,879	786,005	792,564
FOREIGN COUNTRIES :						
Europe:	Austria	12,461	7,557	11,754	4,403	6,051
	Belgium	9,797	3,863	3,314	3,726	5,985
	France	41,975	59,459	31,386	37,001	22,030
	Germany	17,458	12,224	17,654	7,615	17,638
	Greece	393	448	263	207	367
	Holland	0	41	0	90	0
	Italy	22,299	29,659	39,432	11,260	18,945
	Portugal	12		0	0	0
	Russia	108		0	76	0
	Spain	0	0	111	0	0
	Sweden	0	0	32	0	48
	Turkey	2,140	2,424	755	1,107	807
Asia:	Arabia	246,617	306,174	222,214	243,255	303,486
	China, Treaty Ports	1,660	3,606	2,099	5,513	6,197
	Japan	6,669	2,017	2,953	2,510	5,416
	Java	1,521	3,542	5,287	2,727	3,844
	Maldive Islands	2,966	6,138	5,203	1,207	2,044
	Mekran and Sonmiani	24,807	24,267	21,997	20,345	35,365
	Persia and Persian Gulf	1,011,491	1,129,063	1,225,603	1,319,957	1,418,522
	Philippines	2	0	701	125	0
	Siam	117	2,102	1,458	13,946	18,300
	Sumatra	735	1,490	6,679	5,007	4,157
	Turkey	226,430	277,514	253,424	237,651	314,211
Africa:	Abyssinia	12,900	10,305	7,232	17,545	16,394
	Egypt	32,177	26,150	30,532	44,505	38,198
	Madagascar	0	10,555	6,126	0	190
	Mozambique	92,694	92,033	106,539	119,859	127,184
	Réunion	117	0	182	59	78
	Zanzibar	209,679	185,092	265,310	270,893	224,411
America:	South America	64	334	251	407	395
	United States	60,633	23,827	32,415	12,892	7,156
	West Indies*	0	94	104	126	401
Other countries		11,024	989	1,162	119	768
		2,049,034	2,220,967	2,302,172	2,384,133	2,598,588
TOTAL EXPORTS		4,101,440	4,335,437	4,295,808	4,233,529	4,485,179

* See note on p. 51.

No. 6.

Quantity* of Imports of Principal Articles into British India.

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
I.—Animals, Living:					
Horses - - - - - No.	6,671	7,483	6,478	7,578	8,222
Other sorts - - - - - „	3,732	2,080	3,099	2,252	3,193
Total Number of Animals, Living - „	10,403	9,563	9,577	9,830	11,415
II.—Articles of Food and Drink:					
Coffee - - - - - Cwt.	17,598	25,332	23,976	12,088	26,258
Fruits and Vegetables:					
Fruits:					
Cocoanuts - - - - No.	16,458,929	17,707,801	13,254,649	13,404,395	17,985,605
„ Kernel or Copra - Cwt.	162,914	199,861	154,853	109,685	59,047
Other sorts - - - - -	—	—	—	—	—
Vegetables, fresh - - - -	—	—	—	—	—
Grain and Pulse:					
Gram - - - - - Cwt.	1,032	1,600	1,921	1,810	1,681
Pulse - - - - - „	6,565	24,933	39,319	23,533	20,388
Rice in the husk - - - „	1,153	8,319	15,524	13,211	5,265
„ not in the husk - - - „	1,431	3,759	29,550	3,382	2,963
Wheat - - - - „	798	106,680	102,558	124,135	345,912
Other sorts - - - - „	18,310	181,467	103,604	65,298	139,916
„	29,289	326,758	292,476	231,369	516,125
Hops - - - - - - Cwt.	5,838	5,434	4,672	3,920	4,064
Liquors:					
Ale, Beer, and Porter - - Gals.	2,138,518	2,398,580	2,797,965	2,785,574	2,973,943
Spirits.					
Brandy - - - - „	361,716	351,370	341,358	323,237	256,513
Gin - - - - - „	97,544	97,783	87,636	70,267	76,447
Rum - - - - „	53,550	48,316	38,885	27,402	15,968
Whisky - - - - „	361,556	367,361	386,337	388,637	417,619
Other sorts - - - - „	210,121	254,537	246,198	246,441	243,700
„	1,084,487	1,119,367	1,100,414	1,055,984	1,010,247
Wines and Liqueurs:					
Champagne - - - - „	51,505	48,963	46,604	44,889	46,918
Claret - - - - - „	124,379	118,772	113,610	113,866	109,022
Port - - - - - „	77,706	76,732	70,168	77,998	79,751
Sherry - - - - „	51,624	44,955	39,846	42,672	41,271
Other sorts - - - - „	66,573	71,126	79,164	82,671	93,080
„	371,787	360,548	349,392	362,096	370,042
Liqueurs - - - - „	12,089	13,220	13,581	11,587	12,896
Other sorts - - - - „	3,856	4,459	5,848	3,783	2,974
Total Liquors - - - „	3,610,737	3,896,174	4,267,200	4,219,024	4,370,102
Provisions:					
Bacon and Hams - - - Lbs.	749,470	689,395	789,704	852,556	903,939
Biche de mer - - - - „	27,064	5,346	2,243	34,501	18,492
Butter - - - - - „	312,489	313,772	297,473	382,037	290,454
Cheese - - - - - „	678,679	723,939	735,072	815,333	788,442
Fishmaws and Sharkfins - - „	1,289,625	1,261,365	1,500,207	1,512,625	1,416,995
Flour - - - - - „	1,937,426	1,605,772	2,061,528	1,526,114	1,399,655
Fruits and Vegetables—dried, salted, or preserved:					
Dates - - - - Cwt.	766,953	765,726	848,820	647,819	887,001
Other sorts - - - „	108,279	95,086	105,715	97,930	106,842
Ghee - - - - - Lbs.	1,846,409	2,731,280	2,763,429	1,128,630	3,450,748
Salted Fish - - - - „	13,214,188	19,780,445	17,974,179	15,039,296	19,345,703
Dried Fish, not salted - „			1,361,122	1,949,927	1,560,330
Other sorts - - - - Cwt.	189,758	189,081	179,333	190,030	188,642

* The mark — denotes that the quantities are not stated, on account of their being given under different denominations, or for other reasons; while the mark 0 signifies that there was no import or export at all, as the case may be, of the article in question.

No. 7.

Value of Imports of Principal Articles into British India.

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
I.—Animals, Living:					
Horses	249,241	290,372	231,400	286,783	278,107
Other sorts	6,863	4,928	8,309	8,647	15,150
Total Value of Animals, Living	256,104	295,300	239,709	295,430	293,257
II.—Articles of Food and Drink:					
Coffee	104,516	102,484	125,232	62,822	144,076
Fruits and Vegetables:					
Fruits:					
Cocoanuts	65,105	69,676	57,555	63,847	65,149
,, Kernel or Copra	148,496	175,336	137,455	102,606	55,546
Other sorts	25,712	24,763	21,783	11,409	11,396
Vegetables, fresh	2,338	1,520	1,209	1,029	2,164
	241,651	271,295	217,952	178,891	134,255
Grain and Pulse:					
Gram	520	845	951	948	881
Pulse	2,953	10,557	16,134	9,574	8,968
Rice in the husk	260	2,641	5,438	5,110	1,627
,, not in the husk	706	1,760	13,739	1,685	1,370
Wheat	317	43,993	43,785	53,182	152,774
Other sorts	6,016	56,420	35,070	22,984	49,970
	10,772	116,216	115,117	93,483	215,590
Hops	47,435	59,473	36,978	76,927	38,682
Liquors:					
Ale, Beer, and Porter	397,153	412,852	462,110	419,772	445,142
Spirits:					
Brandy	265,578	256,408	226,354	226,345	172,577
Gin	43,486	39,984	32,854	27,248	28,029
Rum	12,918	10,308	8,232	7,246	4,751
Whisky	300,600	289,272	266,508	261,788	286,246
Other sorts	120,723	134,055	139,794	142,517	164,003
	743,305	730,027	673,742	665,144	655,606
Wines and Liqueurs:					
Champagne	113,912	114,236	108,601	112,541	115,307
Claret	71,101	61,400	61,175	56,451	56,708
Port	55,909	60,486	52,728	59,016	59,252
Sherry	39,265	35,325	32,381	33,128	31,120
Other sorts	48,442	52,288	55,913	58,703	60,136
	328,629	323,735	310,798	319,839	322,523
Liqueurs	16,213	16,378	16,039	16,915	17,050
Other sorts	1,766	2,217	2,456	1,791	1,774
Total Liquors	1,487,066	1,485,209	1,465,145	1,423,461	1,442,095
Provisions:					
Bacon and Hams	55,284	49,915	56,609	57,533	58,229
Biche de mer	868	624	125	1,131	844
Butter	30,747	30,069	29,728	36,850	28,973
Cheese	46,170	48,373	46,015	46,844	48,727
Fishmaws and Sharkfins	39,123	40,470	48,247	45,276	47,087
Flour	18,624	15,706	18,147	12,764	12,894
Fruits and Vegetables—dried, salted, or preserved:					
Dates	353,498	343,247	374,016	310,910	420,232
Other sorts	152,406	126,352	149,403	126,313	162,454
Ghee	68,659	101,346	103,757	41,330	122,235
Salted Fish	141,697	206,955	164,004	151,996	181,217
Dried Fish, not salted			6,512	8,310	11,479
Other sorts	597,361	625,036	600,002	636,813	677,422
	1,504,437	1,588,103	1,596,565	1,476,070	1,771,793

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91	1891-92.
II.—ARTICLES OF FOOD AND DRINK—*cont.*						
Salt	Tons	423,897	398,810	410,808	395,243	373,953
Spices:						
Betelnuts	Lbs.	30,743,990	40,371,229	39,520,007	35,739,467	40,468,003
Cardamoms	,,	193,487	124,714	278,114	240,981	273,264
Cassia	,,	80,411	30,564	105,584	52,416	149,755
Chillies	,,	0	0	0	0	44,472
Cinnamon	,,	18,764	11,352	41,876	27,730	20,908
Cloves	,,	8,374,302	7,240,043	6,355,839	7,454,825	5,744,817
Ginger	,,	265,592	199,831	204,631	218,116	481,438
Nutmegs	,,	540,652	531,427	400,954	566,901	447,856
Pepper	,,	2,529,155	2,805,288	5,707,147	7,114,551	10,598,416
Other sorts	,,	264,845	474,397	216,667	222,182	314,629
	,,	43,011,198	51,788,845	52,830,819	51,637,169	58,543,558
Sugar:						
Refined or crystallised, including sugarcandy	Cwt.	1,715,002	1,450,481	1,623,621	2,734,491	2,068,985
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	,,	93,477	167,229	99,492	197,410	144,140
	,,	1,808,479	1,617,710	1,723,113	2,931,901	2,213,125
Tea	Lbs.	3,623,872	4,767,004	5,382,851	4,770,008	6,353,017
Other articles	Cwt.	119	152	135	47	1
III.—METALS AND MANUFACTURES OF:						
Metals:						
Brass:						
Unwrought	Cwt.	86	231	302	81	78
Wrought	,,	9,207	9,916	11,737	12,755	10,933
	,,	9,293	10,147	12,039	12,836	11,011
Copper:						
Old, for re-manufacture	Cwt.	1,251	922	1,315	442	1,032
Unwrought:						
Tiles, Ingots, Cakes, and Bricks	,,	58,793	3,462	107,890	60,016	74,004
Other sorts	,,	67,672	23,511	79,910	51,116	82,877
Wrought:						
Lametta	,,	3,075	1,860	2,193	2,858	2,701
Mixed or Yellow Metal, for sheathing	,,	179,725	58,850	192,446	191,901	185,538
Sheets and other manufactures	,,	222,119	9,885	185,161	140,115	164,936
		532,635	98,490	568,915	446,448	511,088
Iron:						
Old for re-manufacture	Cwt.	6,311	7,279	6,967	8,106	8,886
Cast (pig)	,,	138,506	138,542	116,305	104,642	183,785
Wrought:						
Anchors, Cables, and Kentledge	,,	20,665	25,957	22,306	24,370	27,430
Bar	,,	1,246,156	1,235,844	944,233	1,191,480	965,766
Angle, Bolt, and Rod	,,	421,894	442,160	449,077	395,491	512,227
Sheets and Plates (including tinned plates)	,,	506,134	486,655	534,801	490,795	476,626
Galvanised (other than wire)	,,	349,166	360,603	361,610	478,605	387,786
Hoops	,,	104,559	111,589	101,325	129,835	106,926
Nails, Screws, and Rivets	,,	133,291	144,064	98,830	146,552	139,620
Wire	,,	15,879	11,616	11,370	17,939	10,289
Beams, Pillars, Girders, and Bridge-work	,,	563,164	455,768	343,642	260,343	334,500
Pipes and Tubes	,,	717,215	444,760	462,085	460,196	389,301
Rice-bowls	,,	61,895	61,848	65,040	76,688	48,122
Other manufactures of wrought or cast iron, or of iron mixed with steel	,,	36,752	76,108	90,814	91,514	89,225
	,,	4,321,587	4,002,793	3,608,405	3,876,556	3,680,489

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
II.—ARTICLES OF FOOD AND DRINK—*cont.*					
Salt	795,521	882,130	894,532	779,034	627,953
Spices:					
Betelnuts	369,745	382,014	371,697	374,773	374,471
Cardamoms	26,045	18,163	35,083	32,324	32,943
Cassia	1,184	649	1,911	931	2,659
Chillies	0	0	0	0	340
Cinnamon	307	180	693	1,177	298
Cloves	376,755	287,890	193,628	171,504	104,686
Ginger	1,714	1,527	1,164	1,244	4,455
Nutmegs	33,684	36,109	28,226	42,523	34,525
Pepper	103,248	105,508	200,485	167,315	220,614
Other sorts	18,836	23,193	19,463	21,324	22,205
	931,518	855,228	852,350	813,115	797,196
Sugar:					
Refined or crystallised, including sugarcandy	2,080,336	1,741,264	2,169,105	3,326,850	2,516,804
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	33,281	49,675	30,944	73,036	45,192
	2,113,617	1,790,939	2,200,049	3,399,886	2,561,996
Tea	260,418	317,937	363,681	325,141	443,161
Other articles	55	72	65	22	0
Total Value of Articles of Food and Drink	7,497,006	7,469,086	7,867,666	8,628,852	8,176,797
III.—METALS AND MANUFACTURES OF:					
Metals:					
Brass:					
Unwrought	271	657	900	260	255
Wrought	46,338	54,598	70,765	78,676	64,166
	46,609	55,255	71,665	78,936	64,421
Copper:					
Old, for re-manufacture	3,484	3,475	4,485	1,493	3,221
Unwrought:					
Tiles, Ingots, Cakes, and Bricks	193,593	19,975	399,815	244,470	285,064
Other sorts	237,921	129,409	286,846	203,205	315,938
Wrought:					
Lametta	71,224	44,392	46,864	57,512	55,827
Mixed or Yellow Metal, for sheathing	591,589	295,557	732,436	709,015	706,594
Sheets and other manufactures	904,147	70,505	751,908	597,896	722,380
	2,001,928	563,313	2,222,354	1,813,591	2,089,024
Iron:					
Old, for re-manufacture	1,281	1,657	1,514	1,772	1,705
Cast (pig)	30,646	34,772	30,712	29,114	45,221
Wrought:					
Anchors, Cables, and Kentledge	16,598	28,960	28,461	28,570	34,870
Bar	614,865	634,369	516,840	618,916	478,708
Angle, Bolt, and Rod	193,502	216,754	247,354	212,099	261,720
Sheets and Plates (including tinned plates)	277,455	307,464	371,586	321,980	309,619
Galvanised (other than wire)	314,027	364,691	400,007	486,122	390,499
Hoops	56,343	64,503	65,271	81,936	63,755
Nails, Screws, and Rivets	124,010	144,495	108,487	162,100	151,219
Wire	14,701	12,069	12,754	20,575	10,514
Beams, Pillars, Girders, and Bridge-work	378,569	334,027	255,538	198,213	244,063
Pipes and Tubes	343,378	230,469	228,222	258,183	212,626
Rice-bowls	49,343	49,991	52,886	61,988	38,840
Other manufactures of wrought or cast iron, or of iron mixed with steel	32,677	90,958	94,685	80,739	77,924
	2,447,395	2,515,179	2,414,317	2,562,307	2,321,283

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
III.—METALS AND MANUFACTURES OF—*cont.*						
Metals—*cont.*						
Lead:						
Ore	Cwt.	4,006	4,296	4,566	3,135	3,089
Pig	„	22,667	23,163	19,108	12,902	21,856
Wrought:						
Sheets for tea chests	„	71,944	66,415	66,660	69,891	76,908
Sheets, Pipes, and Tubes	„	5,280	6,848	6,024	6,586	10,697
Other sorts	„	8,074	12,378	9,068	10,515	10,018
Other sorts	„	19	30	7	10	0
	„	111,990	113,130	105,433	103,039	122,568
Quicksilver	Lbs.	270,990	232,991	306,923	307,110	280,689
Steel:						
Cast	Cwt.	19,608	32,210	26,156	17,109	17,328
Hoop	„	171,296	137,108	207,581	236,024	171,266
Other sorts	„	230,023	373,070	234,659	452,332	584,442
	„	420,927	542,388	468,396	705,465	773,036
Tin:						
Unwrought (block)	„	20,846	33,169	39,753	41,269	38,248
Wrought (including plates or sheets, not tinned iron)	„	94	524	88	715	582
	„	20,940	33,693	39,841	41,984	38,830
Zinc or Spelter:						
Unwrought	„	118,412	48,581	69,795	96,119	102,827
Wrought or manufactured	„	15,895	16,120	14,077	15,793	15,776
Other sorts	„	20	5	17	32	248
	„	134,327	64,706	83,889	111,944	118,851
Unenumerated	„	4,888	3,930	8,585	9,334	5,713
Total Metals	„	5,559,007	4,871,357	4,898,243	5,310,348	5,264,092
Hardware and Cutlery (including plated ware)		—	—	—	—	—
Machinery and Millwork:						
Steam-engines and parts:						
Locomotives (excluding those for Railways)		—	—	—	—	—
Other sorts		—	—	—	—	—
Agricultural (not being steam)		—	—	—	—	—
Other sorts		—	—	—	—	—
Railway Plant and Rolling-stock:						
Locomotive Engines and Tenders		—	—	—	—	—
Carriages and Trucks		—	—	—	—	—
Materials for Construction:						
Steel rails and fish plates	Cwt.	0	0	0	1,043,525	755,897
Sleepers and keys of steel and cast iron	„	0	0	0	1,099,449	428,518
Other sorts	„	6,231,100	3,853,958	3,624,479	358,478	309,241
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:						
Chemicals:						
Alum	Cwt.	71,926	51,155	77,011	71,896	74,203
Arsenic	„	946	733	1,326	1,171	1,114
Copperas	„	11,197	16,007	21,281	25,247	23,609
Sal Ammoniac	„	3,037	2,611	6,023	3,866	3,294
Sulphur (Brimstone)	„	18,483	21,233	28,167	21,231	25,388
Sulphuric Acid	„	12,544	18,530	12,209	23,390	13,827
Other sorts	„	—	—	—	—	—

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
III.—METALS AND MANUFACTURES OF—*cont.*					
Metals—*cont.*					
Lead:					
Ore	4,633	5,088	5,396	3,529	3,399
Pig	22,575	25,477	20,147	13,106	21,663
Wrought:					
Sheets for tea chests	105,777	101,145	106,548	107,073	117,977
Sheets, Pipes, and Tubes	5,787	8,244	7,594	8,700	13,166
Other sorts	11,611	18,857	13,797	15,484	14,703
Other sorts	26	52	8	14	9
	150,409	158,863	153,490	147,906	170,908
Quicksilver	40,869	36,869	54,243	54,548	43,645
Steel:					
Cast	20,763	31,352	24,130	21,768	22,489
Hoop	99,314	84,165	141,451	157,754	104,615
Other sorts	138,734	229,072	162,859	292,665	332,421
	258,811	344,589	328,440	472,187	459,525
Tin:					
Unwrought (block)	168,567	254,650	283,917	277,208	263,280
Wrought (including plates or sheets, not tinned iron)	710	895	636	1,094	1,051
	169,278	255,545	284,553	278,302	264,331
Zinc or Spelter:					
Unwrought	124,902	55,383	87,193	145,440	159,290
Wrought or manufactured	23,259	29,120	26,274	31,938	32,696
Other sorts	34	11	10	57	628
	148,195	84,514	113,477	177,435	192,614
Unenumerated	49,589	39,886	63,448	60,935	49,322
Total Metals	5,313,083	4,054,013	5,705,987	5,646,147	5,655,073
Hardware and Cutlery (including plated ware)	1,093,939	1,102,205	1,096,191	1,197,614	1,238,994
Machinery and Millwork:					
Steam-engines and parts:					
Locomotives (excluding those for Railways)	1,332	0	1,100	3,727	1,556
Other sorts	1,120,590	1,303,900	1,532,122	1,102,163	1,063,636
Agricultural (not being steam)	49,883	64,139	55,257	61,675	128,214
Other sorts	628,413	948,832	846,906	896,298	918,191
	1,800,218	2,316,871	2,435,385	2,063,863	2,111,597
Railway Plant and Rolling-stock:					
Locomotive Engines and Tenders	221,028	390,112	145,973	260,876	397,822
Carriages and Trucks	284,912	629,010	285,998	573,727	460,350
Materials for Construction:					
Steel rails and fish-plates	0	0	0	464,521	283,172
Sleepers and keys of steel and cast iron	0	0	0	411,548	150,542
Other sorts	2,071,663	1,474,117	1,389,366	291,181	192,287
	2,577,603	2,493,239	1,821,337	2,001,853	1,484,173
Total Value of Metals and Manufactures of	10,784,843	9,966,328	11,058,900	10,909,477	10,439,837
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
Chemicals:					
Alum	27,610	21,104	32,899	29,439	30,500
Arsenic	1,600	1,287	2,428	1,901	1,992
Copperas	3,225	5,591	7,977	10,795	7,443
Sal Ammoniac	7,534	6,788	16,175	9,629	8,467
Sulphur (Brimstone)	9,110	10,838	14,743	10,781	15,590
Sulphuric Acid	16,362	22,554	15,778	29,290	18,475
Other sorts	119,779	137,058	156,261	162,315	203,941
	185,220	205,220	245,761	254,150	286,408

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS —*cont.*						
Drugs, Medicines and Narcotics:						
Aloes	Cwt.	788	864	1,049	383	1,499
Asafœtida	„	4,521	9,513	9,226	6,747	6,298
Camphor:						
Bhimsaini or Baras	Lbs.	819	322	453	637	884
Other sorts	„	1,679,615	1,892,065	1,266,585	1,370,232	1,502,541
Cassia lignea	Cwt.	16,135	21,813	24,064	26,254	22,728
Galangal	„	3,690	2,247	2,324	3,263	2,845
Quinine	Lbs.	13,937	24,059	15,119	30,498	30,436
Other sorts		—	—	—	—	—
Opium	Lbs.	212	254	238	272	340
Tobacco:						
Unmanufactured	Lbs.	700,909	481,693	449,644	449,805	479,401
Manufactured:						
Cigars	„	60,949	61,008	60,987	59,809	69,232
Other sorts	„	804,876	1,257,934	983,935	1,267,401	1,275,887
		1,566,734	1,800,635	1,494,566	1,777,015	1,824,520
Dyeing and Tanning Materials:						
Aniline and Alizarine Dyes	Oz.	13,976,914*	52,738,826	57,681,958	61,722,364	89,474,482
Cochineal	Cwt.	2,334	2,108	2,199	2,293	2,147
Cutch	„	176	44	18	9	55
Gambier	„	18,396	16,395	14,652	18,780	17,961
Indigo	„	1,478	1,390	1,601	902	1,294
Madder or Munjeet	„	13,737	5,394	2,646	6,309	1,454
Myrabolams	„	530	4,096	3,570	1,949	9,029
Saffron	„	281	247	319	331	339
Other sorts	„	37,095	16,305	16,067	14,427	14,854
V.—OILS:						
Oils:						
Animal	Gals.	45,000	37,929	34,969	84,960	97,901
Essential	„	2,683	2,826	2,756	4,413	5,411
Mineral:						
Kerosine	„	30,200,042	38,285,559	51,839,400	52,561,297	55,508,063
Other sorts	„	1,221,517	1,666,326	1,550,758	1,673,978	2,601,220
Vegetable, not Essential:						
Cocoa-nut	Gals.	684,017	711,056	843,597	1,516,509	1,458,909
Earth-nut	„	517,727	449,954	8,058	28,433	12,376
Linseed	„	310,448	386,799	285,292	278,424	333,553
Other sorts	„	13,355	12,914	22,439	17,107	38,489
	& Cwt.	0	25	6	2	0
Total Quantity of Oils	Gals.	32,994,789	41,553,363	54,597,269	56,165,121	60,055,922
	& Cwt.	0	25	6	2	0
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:						
Canes and Rattans	Cwt.	18,080	19,038	24,675	18,815	24,903
Caoutchouc, raw	„	341	53	84	28	0
Coal:						
Coal	Tons.	800,160	810,465	572,791	767,632	724,195
Coke	„	10,554	11,732	9,765	9,339	12,766
Patent fuel	„	38,164	11,281	19,114	7,693	10
Coir, unmanufactured	Cwt.	168	367	577	112	656
Cotton, raw:						
Asiatic	„	54,589	63,070	115,362	80,165	64,128
Other than Asiatic	„	89	1,557	638	4,071	17,135
Feathers	Lbs.	4,179	11,581	1,032	325	210
Flax, raw	„	36,194	35,840	13,902	29,056	500
Gums and Resins						
Arabic	Cwt.	2,188	13,020	8,637	6,505	5,245
Benjamin	„	14,628	13,289	12,498	8,825	12,022
Olibanum or Frankincense	„	26,680	23,776	23,220	28,649	24,004
Rosin	„	25,902	19,073	36,305	33,247	45,200
Other sorts	„	5,254	7,020	7,935	6,854	13,841
Hemp, raw	„	11,090	9,223	7,609	9,788	12,413

* Exclusive of Alizarine Dyes.

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont.*					
Drugs, Medicines and Narcotics:					
Aloes	2,184	1,901	2,454	824	4,358
Asafœtida	17,097	43,178	40,229	37,163	28,620
Camphor:					
Bhimsaini or Barss	2,673	1,508	1,871	1,929	3,071
Other sorts	70,142	101,560	81,663	132,851	120,940
Cassia lignea	22,229	31,979	35,265	38,107	32,488
Galangal	2,066	1,326	1,573	1,975	2,048
Quinine	35,749	39,844	21,687	40,728	36,920
Other sorts	185,133	208,632	206,230	226,220	254,424
Opium	404	412	398	513	486
Tobacco:					
Unmanufactured	11,920	11,256	11,126	15,363	18,551
Manufactured:					
Cigars	21,238	19,494	24,773	25,748	26,570
Other sorts	68,814	108,506	91,817	110,725	121,949
	101,972	139,256	127,716	151,836	167,070
Dyeing and Tanning Materials:					
Aniline and Alizarine Dyes	103,197*	278,041	350,654	353,994	458,191
Cochineal	22,755	18,683	18,276	18,948	18,663
Cutch	322	55	27	19	114
Gambier	38,201	36,624	39,346	42,897	36,741
Indigo	5,756	1,983	10,703	1,866	6,118
Madder or Munjeet	18,643	6,427	2,949	6,898	1,528
Myrabolams	194	1,320	991	519	2,950
Saffron	58,058	55,838	75,035	65,673	60,272
Other sorts	134,329	22,014	17,506	20,369	13,806
	381,455	420,985	515,487	511,183	598,383
Total Value of Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials	1,006,324	1,195,801	1,280,334	1,397,479	1,535,216
V.—OILS:					
Oils:					
Animal	4,355	4,101	3,562	8,332	9,885
Essential	4,485	4,700	5,289	7,153	7,460
Mineral:					
Kerosine	1,216,817	1,767,937	2,386,684	2,262,529	2,200,966
Other sorts	57,659	93,343	92,143	99,690	167,175
Vegetable, not Essential:					
Cocoa-nut	89,424	88,125	105,077	200,355	188,687
Earth-nut	61,486	50,142	1,146	4,325	1,845
Linseed	50,497	62,130	47,240	48,499	54,560
Other sorts	2,068	2,347	4,072	3,304	5,377
Total Value of Oils	1,486,791	2,072,825	2,645,213	2,634,187	2,635,955
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Canes and Rattans	16,062	15,511	22,950	17,215	23,768
Caoutchouc, raw	3,033	615	843	417	0
Coal:					
Coal	1,558,227	1,848,348	1,224,747	1,490,902	1,213,403
Coke	33,105	39,684	33,462	32,673	37,001
Patent fuel	72,578	24,181	50,380	19,867	89
Coir, unmanufactured	141	289	337	32	709
Cotton, raw:					
Asiatic	125,019	146,979	266,754	177,824	121,944
Other than Asiatic	167	3,600	2,138	16,860	55,329
Feathers	99	361	249	61	14
Flax, raw	1,173	1,290	474	698	29
Gums and Resins:					
Arabic	7,273	49,766	20,458	10,615	7,906
Benjamin	56,710	44,543	40,032	29,002	33,225
Olibanum or Frankincense	34,916	27,762	27,360	30,113	26,421
Rosin	10,467	8,420	17,216	15,150	19,648
Other sorts	10,946	18,389	17,569	17,052	23,007
Hemp, raw	26,177	23,836	27,053	26,404	30,277

* Exclusive of Alizarine Dyes.

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*						
Hides and Skins:						
Hides, raw	No.	68,770	40,234	35,240	100,430	34,947
	= Cwt.	6,222	3,758	3,583	9,798	2,704
Skins, raw	No.	384,342	328,949	451,839	752,616	855,059
	= Cwt.	9,451	8,272	11,258	16,338	19,768
Horns	,,	368	627	505	611	1,117
Ivory, unmanufactured	Lbs.	514,272	599,690	370,412	534,995	452,550
Jewellery, &c.:						
Precious Stones and Pearls, unset		—	—	—	—	—
Jute, raw	Cwt.	306	504	1,379	6,007	833
Lac, stick	,,	1,141	1,845	850	142	573
Manures	Tons.	214	70	132	95	459
Natural Curiosities		—	—	—	—	—
Pitch, Tar, and Dammer	Cwt.	98,103	100,116	98,978	129,911	147,172
Plants, Living		—	—	—	—	—
Seeds:						
Essential:						
Cummin	Cwt.	619	2,085	506	1,053	1,028
Castor	,,	443	1	4	79	261
Linseed	,,	2,581	4,788	4,510	8,686	6,310
Mustard	,,	384	1,798	2,377	584	566
Poppy	,,	246	1,198	2,191	4,499	30,597
Rape	,,	17,809	5,003	1,048	30,157	11,837
Til or Jinjili	,,	66,950	67,845	97,615	74,171	36,484
Other sorts	,,	11,167	14,279	11,400	11,362	9,750
	,,	100,199	96,997	119,651	130,591	96,833
Shells and Cowries:						
Shells (chanks, large ornamental shells, &c.)	No. & Cwt.	3,315,838	4,019,596	4,956,292	0	0
		0	46	25	28,598	20,225
Tortoise-shell (including nakhla or nakh	Lbs.	21,624	18,937	17,957	17,476	17,221
Cowries	,,	17,109	16,705	19,523	19,446	18,857
Silk, raw	Lbs.	2,598,597	2,045,569	2,360,467	2,406,239	2,701,069
Stone and Marble	Cwt.	223,735	148,898	389,301	325,213	446,151
Tallow	,,	2,723	2,686	4,993	6,991	7,902
Wax (excluding candles)	,,	1,182	2,016	973	1,072	1,922
Wood:						
Teak	Cubic Tons	653	3,521	5,562	4,164	3,095
Other Timber	Tons	14,730	16,297	13,388	12,350	12,908
Firewood	,,	2,259	2,700	2,150	3,913	3,556
Ornamental:						
Sandal		—	—	—	—	—
Ebony		—	—	—	—	—
Other sorts		—	—	—	—	—
Wool, raw	Lbs.	3,475,085	4,500,219	5,100,556	4,236,826	4,345,439
All other Articles		—	—	—	—	—
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:						
Yarns and Textile Fabrics:						
Cotton:						
Twist and Yarn	Lbs.	51,542,549	52,587,181	46,382,525	50,970,950	50,404,318
Manufactures:						
Piece goods:						
Grey (unbleached)	Yards	1,180,175,270	1,347,298,683	1,257,001,362	1,280,589,631	1,173,176,482
White (bleached)	,,	320,463,785	406,492,369	339,098,094	373,148,661	361,394,837
Coloured, Printed, or Dyed	,,	339,102,827	372,456,754	400,949,291	360,335,370	348,116,680
Handkerchiefs and Shawls in the piece	No.	17,745,430	17,679,787	19,415,005	18,896,926	16,428,040
Other sorts	Yards	376,470	294,917	183,855	439,426	196,361
Lace and Patent Net	,,	3,352,438	2,061,153	1,678,699	1,871,689	2,218,634
Hosiery, pure and mixed		—	—	—	—	—
Thread, sewing	Lbs.	907,873	945,391	839,962	1,164,989	1,121,350
Canvas	Yards	98,039	75,308	70,912	85,310	64,857
Other sorts	Lbs.	1,493,444	1,540,018	1,848,932	1,658,161	1,257,009

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Hides and Skins:					
Hides, raw	15,135	9,299	7,880	20,032	6,079
Skins, raw	25,703	25,943	31,332	52,748	68,266
Horns	3,752	7,593	4,477	5,200	7,169
Ivory, unmanufactured	259,918	294,564	210,744	325,380	274,343
Jewellery, &c.:					
Precious Stones and Pearls, unset	156,378	162,451	147,495	129,869	142,364
Jute, raw	192	365	927	2,749	99
Lac, stick	2,406	4,064	1,907	419	1,594
Manures	1,434	282	1,006	572	1,929
Natural Curiosities	1,346	1,753	2,120	1,115	1,633
Pitch, Tar, and Dammer	30,780	34,273	39,409	50,466	52,189
Plants, Living	1,885	1,556	1,718	2,523	1,265
Seeds:					
Essential:					
Cummin	1,037	3,438	786	1,750	1,668
Castor	210	1	3	55	131
Linseed	1,473	2,923	2,986	5,397	3,786
Mustard	230	1,148	1,601	431	414
Poppy	177	846	1,606	3,136	19,136
Rape	9,289	2,894	676	19,193	7,185
Til or Jinjili	47,793	50,951	75,867	57,645	26,340
Other sorts	16,323	26,992	24,836	23,766	21,134
	76,532	89,193	108,361	111,373	79,794
Shells and Cowries:					
Shells (chanks, large ornamental shells, &c.)	20,241	21,911	19,354	29,314	25,085
Tortoise-shell (including nakhla or nakh)	3,710	3,864	4,709	6,720	6,487
Cowries	6,377	6,348	9,180	8,138	8,766
Silk, raw	1,174,321	905,939	1,067,045	1,115,068	1,264,003
Stone and Marble	21,446	34,094	33,238	31,648	34,507
Tallow	5,324	6,062	10,393	10,424	15,379
Wax (excluding candles)	4,179	9,927	3,661	3,651	6,456
Wood:					
Teak	4,175	25,501	37,919	27,975	19,375
Other Timber	53,633	67,023	62,654	54,555	55,181
Firewood	2,315	2,883	2,194	3,778	3,855
Ornamental:					
Sandal	949	687	412	1,153	1,121
Ebony	202	85	65	17	0
Other sorts	3,043	4,378	3,702	3,693	5,587
Wool, raw	93,410	124,883	136,744	115,615	118,204
All other Articles	19,163	22,136	24,591	33,684	29,553
Total Value of Raw Materials and Unmanufactured Articles	3,944,042	4,115,681	3,725,259	4,032,765	3,828,053
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:					
Yarns and Textile Fabrics:					
Cotton:					
Twist and Yarn	3,581,906	3,746,797	3,482,529	3,768,362	3,514,620
Manufactures:					
Piece goods:					
Grey (unbleached)	13,401,533	15,962,476	15,055,190	15,617,703	13,935,798
White (bleached)	4,627,848	5,574,451	4,727,559	5,298,573	4,953,905
Coloured, Printed, or Dyed	5,287,831	5,623,182	6,016,896	5,672,368	5,701,416
Handkerchiefs and Shawls in the piece	209,668	214,380	212,253	209,219	169,814
Other sorts	17,271	15,104	8,499	19,120	9,963
Lace and Patent Net	92,190	58,687	48,213	48,157	56,610
Hosiery, pure and mixed	79,012	87,171	73,538	94,480	96,416
Thread, sewing	132,711	139,700	132,785	181,370	166,121
Canvas	3,526	2,724	2,834	3,073	2,363
Other sorts	72,877	86,333	113,632	97,924	82,446
	23,924,467	27,764,508	26,391,399	27,241,987	25,174,852

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Yarns and Textile Fabrics—*cont.*						
Flax:						
Twist and Yarn	Lbs.	27,319	27,676	10,546	30,409	22,799
Manufactures:						
Piece goods	Yards	984,945	990,753	1,371,513	1,489,512	702,448
Thread, sewing	Lbs.	162,503	148,670	111,172	165,966	136,062
Canvas	Yards	1,623,043	1,361,336	1,354,889	1,573,296	1,261,215
Other sorts (including bags and sacks)	Lbs.	158,707	184,194	120,530	176,890	206,287
Hemp:						
Manufactures (excluding cordage):						
Cloth	Yards	133,868	129,629	137,122	173,661	187,181
Bags and Sacks	No.	13,435	20,951	6,423	2,859	1,032
Jute:						
Manufactures:						
Gunny Bags	No.	2,601,971	2,382,921	2,673,076	2,607,049	2,775,686
„ Cloths	Yards	512,833	353,789	362,126	482,456	12,008
Canvas	„	0	0	0	0	912,896
Twist and Yarn	Lbs.	0	0	0	0	21,966
Rope and Twine	Cwt.	435	450	483	170	539
Other kinds	„	199	155	159	1,197	276
Silk:						
Manufactures:						
Thread for sewing, &c.	Lbs.	13,301	8,163	10,382	9,125	12,968
Piece goods	Yards	11,760,401	10,952,732	11,426,168	10,032,619	11,790,744
Goods of silk mixed with other materials	„	3,970,372	4,223,332	3,978,949	1,997,677	3,146,107
Other sorts	Lbs.	1,603	4,497	7,420	17,081	16,832
Wool:						
Manufactures:						
Piece goods	Yards	13,806,388	11,864,523	10,215,322	13,110,184	13,838,518
Shawls	No.	515,372	663,984	901,511	1,085,727	796,718
Braids	Lbs.	284,150	365,250	274,629	304,710	291,454
Other sorts	„	1,406,454	1,267,019	1,172,321	1,427,050	1,496,556
Agricultural Implements		—	—	—	—	—
Apparel:						
Apparel (including haberdashery, millinery, &c., but excluding hosiery)		—	—	—	—	—
Boots and Shoes	Pairs	372,186	304,597	343,665	385,695	385,388
Arms, Ammunition, &c. (excluding military accoutrements):						
Fire-arms and parts thereof		—	—	—	—	—
Gunpowder, common	Lbs.	60,230	403,525	66,200	186,746	263,125
„ sporting	„	194,097	203,127	175,189	191,080	244,528
Dynamite and other explosives	Cwt.	1,345	4,010	6,682	7,191	5,639
Other sorts		—	—	—	—	—
Art, works of		—	—	—	—	—
Books and Printed Matter (including maps and charts)	Cwt.	11,362	14,790	11,707	15,265	16,053

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
VII. — ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Flax:					
Twist and Yarn	990	900	265	1,016	1,137
Manufactures:					
Piece goods	31,375	34,885	40,763	43,802	22,370
Thread, sewing	10,812	11,025	9,239	11,530	10,106
Canvas	74,657	72,538	66,038	77,413	70,138
Other sorts (including bags and sacks)	13,368	10,783	10,335	10,476	13,865
	130,212	129,231	126,375	143,221	116,479
Hemp:					
Manufactures (excluding cordage):					
Cloth	4,495	5,900	5,056	6,554	6,687
Bags and Sacks	220	350	170	41	24
	4,715	6,250	5,226	6,595	6,711
Jute:					
Manufactures:					
Gunny Bags	38,513	35,434	40,630	40,586	40,922
,, Cloths	12,662	9,045	9,314	10,901	192
Canvas	0	0	0	0	21,780
Twist and yarn	0	0	0	0	497
Rope and Twine	1,325	1,429	1,710	551	1,762
Other kinds	457	698	755	4,504	1,034
	52,957	46,606	52,409	56,542	66,187
Silk:					
Manufactures:					
Thread for sewing, &c.	12,665	7,235	11,193	6,044	10,085
Piece goods	1,447,751	1,349,675	1,423,027	1,201,293	1,453,407
Goods of silk mixed with other materials	281,670	321,132	335,761	165,003	273,471
Other sorts	1,732	4,124	8,133	14,022	13,732
	1,743,818	1,682,166	1,778,114	1,386,362	1,750,695
Wool:					
Manufactures:					
Piece goods	1,403,718	1,189,526	1,039,897	1,295,162	1,336,697
Shawls	107,369	161,119	234,254	293,054	197,749
Braids	49,410	66,501	51,527	55,979	53,760
Other sorts	155,258	144,804	129,557	174,018	173,825
	1,715,755	1,561,950	1,455,235	1,818,213	1,762,031
Total Yarns and Textile Fabrics	31,154,820	34,938,408	33,291,552	34,422,298	32,392,712
Agricultural Implements	57,734	62,619	60,170	59,737	73,362
Apparel:					
Apparel (including haberdashery, millinery, &c., but excluding hosiery)	1,142,376	1,131,333	1,175,207	1,213,509	1,259,403
Boots and Shoes	134,253	111,764	121,187	136,389	138,624
	1,276,629	1,243,097	1,296,394	1,349,898	1,398,027
Arms, Ammunition, &c. (excluding military accoutrements):					
Fire-arms and parts thereof	54,700	58,104	40,057	36,376	44,456
Gunpowder, common	1,975	13,877	2,306	6,336	8,179
,, sporting	19,950	21,832	19,139	20,807	25,925
Dynamite and other explosives	16,235	51,520	83,978	89,018	79,279
Other sorts	38,954	54,514	46,111	53,794	48,678
	131,814	199,847	191,591	206,331	206,517
Art, works of	36,810	32,603	37,247	44,175	57,801
Books and Printed Matter (including maps and charts)	181,719	214,129	215,027	222,401	221,594

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Building and Engineering Materials:					
Asphalt - - - - Cwt.	23,427	28,807	30,779	44,453	28,585
Bricks and Tiles - - - No.	2,820,014	3,809,854	2,681,711	3,105,632	3,027,412
Cement - - - - Cwt.	362,397	425,606	496,230	556,608	549,336
Chalk and Lime - - - „	37,038	20,260	63,696	24,988	56,019
Clay - - - - „	20,304	16,992	34,596	44,858	38,968
Earthenware Piping - - - „	23,845	38,097	31,428	31,181	38,226
Other sorts - - - „	27,217	10,565	22,968	5,848	13,891
Cabinet-ware and Furniture - - -	—	—	—	—	—
Candles - - - - Lbs.	3,033,216	2,423,446	4,189,745	3,627,375	3,868,523
Caoutchouc, manufactures of - -	—	—	—	—	—
Carriages, Carts, &c. (excluding railway carriages), and parts thereof -	—	—	—	—	—
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain) - - - - -	—	—	—	—	—
Clocks and Watches - - No.	125,309	118,877	113,779	168,904	171,114
Coir, manufactures of (excluding rope) - Cwt.	9,379	11,071	10,853	13,276	16,324
Corals, Real - - - Lbs.	167,059	168,120	196,275	223,233	231,860
Cordage and Rope of vegetable fibre (excluding jute) - - - Cwt.	8,145	7,162	7,925	10,707	9,438
Corks - - - - „	1,413	1,455	1,275	1,372	1,177
Earthenware and Porcelain - - -	—	—	—	—	—
Fireworks - - - - - -	—	—	—	—	—
Glass:					
Sheet and Plate - - Supl. Feet	5,974,818	6,407,266	5,942,971	7,988,193	6,826,756
Beads and False Pearls - - Cwt.	15,329	27,993	23,046	18,655	22,802
Bottles, common - { Gross	15,421	16,352	17,002	24,791	19,595
{ = Cwt.	19,288	23,848	23,905	31,117	26,784
Other ware - - - -	—	—	—	—	—
Hides and Skins:					
Hides, dressed or tanned - { No.	12,010	8,215	8,802	8,936	4,690
{ = Cwt.	831	452	785	637	469
Skins, dressed or tanned - { No.	203,187	124,902	160,899	167,571	159,169
{ = Cwt.	2,004	1,126	1,245	1,557	1,475
Instruments and Apparatus:					
Musical - - - - -	—	—	—	—	—
Photographic - - - - -	—	—	—	—	—
Scientific, Philosophical, &c. - -	—	—	—	—	—
Ivory, manufactured - - -	—	—	—	—	—
Jewellery, &c.:					
Jewellery - - - - -	—	—	—	—	—
Plate - - - - - -	—	—	—	—	—
Lac:					
Shell - - - Cwt.	0	2	28	0	0
Other sorts - - - „	1	0	0	0	0
Leather:					
Unwrought - - - „	1,903	2,137	1,721	1,739	2,302
Manufactures of:					
Saddlery and Harness - -	—	—	—	—	—
Other sorts - - - -	—	—	—	—	—
Matches, lucifer and other - -	—	—	—	—	—
Mats - - - Sq. Yds.	932,537	897,646	959,544	1,031,144	1,209,463
Oil and Floor Cloth - - „	329,363	347,284	318,388	421,082	547,769
Paints and Colours - - Cwt.	139,829	184,383	154,124	150,436	151,776
Painter's Materials - - - „	—	—	—	—	—
Paper and Pasteboard:					
Printing Paper - - - „	84,154	85,142	79,117	100,164	94,163
Writing Paper and Envelopes - - -	—	—	—	—	—
Other kinds of Paper - - Cwt.	49,449	45,835	50,212	47,404	71,083
Pasteboard, Millboard, &c. - - „	8,049	8,438	3,309	7,864	10,772

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Building and Engineering Materials:					
Asphalt	5,596	7,590	8,409	11,242	7,170
Bricks and Tiles	18,433	33,996	23,304	25,211	22,908
Cement	76,505	102,196	121,515	124,529	115,673
Chalk and Lime	2,454	2,098	6,145	2,735	4,801
Clay	3,227	3,122	5,794	8,703	7,059
Earthenware Piping	6,792	13,200	11,539	11,885	14,457
Other sorts	3,610	1,936	2,515	511	942
	116,622	163,238	179,221	184,816	173,010
Cabinet-ware and Furniture	89,712	100,580	99,397	91,415	113,258
Candles	97,894	77,976	135,947	111,495	126,777
Caoutchouc, manufactures of	23,228	23,860	24,440	23,915	29,909
Carriages, Carts, &c. (excluding railway carriages), and parts thereof	66,684	72,566	66,260	82,041	81,167
Chinese and Japanese-ware (including lacquered ware, but not earthenware and porcelain)	44,463	45,179	41,183	38,237	36,080
Clocks and Watches	118,376	100,677	104,531	129,732	140,283
Coir, manufactures of (excluding rope)	9,604	10,752	11,470	12,182	16,525
Corals, Real	160,211	141,790	140,194	168,716	168,113
Cordage and Rope of vegetable fibre (excluding jute)	30,845	28,872	36,231	41,371	37,250
Corks	20,451	19,932	17,978	17,454	12,151
Earthenware and Porcelain	223,658	224,820	223,929	227,874	273,573
Fireworks	52,421	28,368	54,551	63,367	68,270
Glass:					
Sheet and Plate	49,190	56,155	55,244	69,035	68,911
Beads and False Pearls	160,568	194,767	183,771	158,212	167,628
Bottles, common	20,821	23,245	25,823	32,914	27,383
Other ware	348,380	383,887	382,289	390,076	464,281
	578,959	658,054	647,127	650,237	728,203
Hides and Skins:					
Hides, dressed or tanned	10,702	8,485	9,144	7,232	7,609
Skins, dressed or tanned	36,384	25,743	33,120	33,848	37,701
Instruments and Apparatus:					
Musical	73,148	91,559	85,588	94,165	95,772
Photographic	21,424	26,161	28,276	30,014	35,087
Scientific, Philosophical, &c.	80,529	92,072	99,893	106,427	121,724
Ivory, manufactured	11,460	7,611	17,506	21,189	22,393
Jewellery, &c.:					
Jewellery	89,755	105,246	75,735	84,108	77,680
Plate	7,171	11,040	7,981	10,443	12,420
Lac:					
Shell	0	3	121	0	0
Other sorts	5	0	0	0	0
Leather:					
Unwrought	31,117	36,969	32,097	31,792	36,293
Manufactures of:					
Saddlery and Harness	55,803	59,355	64,668	57,060	66,395
Other sorts	62,792	70,618	88,053	81,403	88,761
Matches, lucifer and other	243,554	194,546	239,407	282,755	331,689
Mats	13,023	13,990	12,724	12,607	16,027
Oil and Floor Cloth	16,847	18,424	17,838	23,627	29,664
Paints and Colours	201,212	241,609	204,044	233,815	225,747
Painters' Materials	64,116	66,314	63,322	69,046	67,112
Paper and Pasteboard:					
Printing Paper	154,708	156,594	142,826	178,844	170,682
Writing Paper and Envelopes	148,522	143,658	154,626	153,583	163,353
Other kinds of Paper	109,016	102,484	106,819	93,843	129,981
Pasteboard, Millboard, &c.	6,061	7,799	3,208	5,166	6,323
	418,307	410,535	407,479	431,436	470,339

No. 6—*concluded.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*concluded.*

ARTICLES.		1887-88.	1888-89.	1889 90.	1890-91.	1891-92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Perfumery		—	—	—	—	—
Printing and Lithographing materials (other than paper)		—	—	—	—	—
Ships, parts of		—	—	—	—	—
Soap	Cwt.	61,139	74,072	64,190	53,447	60,756
Stationery (excluding paper)		—	—	—	—	—
Telegraph, Materials for construction of		—	—	—	—	—
Toys and Requisites for Games		—	—	—	—	—
Umbrellas	No.	4,683,185	4,728,320	3,722,720	3,749,754	4,684,125
Wood, manufactures of		—	—	—	—	—
Articles (not specified) imported by Post		—	—	—	—	—
All other Articles		—	—	—	—	—

No. 7—*concluded.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*concluded.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Perfumery	30,741	26,018	30,368	27,230	27,910
Printing and Lithographing materials (other than paper)	41,124	38,124	35,513	48,008	50,790
Ships, parts of	195,922	189,145	67,328	42,220	59,484
Soap	94,903	102,289	111,388	92,852	110,417
Stationery (excluding paper)	219,089	223,846	232,133	223,874	245,567
Telegraph, materials for construction of	1,598	1,020	1,694	1,165	6,520
Toys and Requisites for Games	139,553	157,967	135,862	150,094	161,394
Umbrellas	371,300	410,604	314,106	326,092	414,942
Wood, manufactures of	38,395	46,378	51,931	41,511	42,052
Articles (not specified) imported by Post	227,572	220,466	236,184	248,630	231,435
All other Articles	134,473	171,793	165,095	176,375	180,836
Total Value of Articles Manufactured and partly Manufactured	37,409,702	41,455,297	39,743,039	41,136,710	39,628,312
GRAND TOTAL	62,384,813	66,570,318	66,565,120	69,034,900	66,587,457

No. 8.

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India.

ARTICLES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
I.—ANIMALS, LIVING :						
Horses	No.	770	864	468	726	564
Other sorts	„	101,309	96,044	102,755	114,947	107,231
Total Number of Animals, Living	„	102,079	96,908	103,223	115,673	107,795
II.—ARTICLES OF FOOD AND DRINK :						
Coffee	Cwt.	273,775	365,299	239,795	233,451	311,864
Fruits and Vegetables :						
Fruits :						
Cocoanuts	No.	263,000	425,851	454,150	250,659	349,884
„ Kernel or Copra	Cwt.	21,027	45,279	6,777	7,673	36,265
Other sorts		—	—	—	—	—
Vegetables, fresh		—	—	—	—	—
Grain and Pulse :						
Gram	Cwt.	302,444	293,674	334,918	317,861	341,567
Jowari and Bajra	„	640,765	611,960	932,572	1,095,952	1,572,882
Pulse	„	1,426,058	618,489	313,808	301,035	785,709
Oats	„	69,779	56,187	115,421	86,928	89,680
Rice in the husk	„	385,351	376,412	324,655	489,288	427,048
„ not in the husk	„	28,148,706	22,768,229	26,774,251	34,474,053	32,739,881
Wheat	„	13,538,169	17,610,081	13,799,224	14,320,496	30,303,425
Other sorts	„	94,438	81,389	92,420	63,051	125,680
	„	44,605,650	42,416,421	42,687,269	51,148,664	66,385,872
Liquors :						
Spirits :						
Rum	Gals.	26	51	4,476	3,248	95,392
Other sorts	„	442	43	0	31,727	11,054
Other sorts	„	0	22	11	0	0
		468	116	4,487	34,975	106,446
Provisions :						
Biche de mer	Lbs.	50,390	40,472	31,729	51,239	49,741
Fishmaws and Sharkfins	„	1,034,882	858,470	709,777	911,839	779,104
Flour	„	36,082,348	36,290,371	48,572,042	47,035,853	61,028,205
Fruits and Vegetables—dried, salted, or preserved	Cwt.	125,802	141,264	151,344	134,986	175,355
Ghee	Lbs.	2,428,075	2,175,171	2,343,333	2,360,205	2,253,012
Lard	„	767,657	724,279	904,288	762,851	830,498
Salted fish	„	4,870,944	6,146,797	5,101,581	7,119,915	7,770,318
Dried fish, not salted	„			1,480,960	1,622,215	1,898,448
Other sorts	Cwt.	57,667	82,368	75,836	56,055	114,770
Spices :						
Betelnuts	Lbs.	749,455	328,056	275,102	174,423	292,308
Cardamoms	„	155,201	377,241	145,607	175,638	278,309
Chillies	„	0	0	7,025,696	7,833,742	8,297,413
Cinnamon	„	11,215	12,530	10,758	15,271	11,695
Ginger	„	9,510,564	10,212,971	6,918,681	4,190,594	3,185,378
Nutmegs	„	1,120	190	0	720	1,839
Pepper	„	7,146,236	7,666,007	8,249,100	11,891,814	11,849,448
Other sorts	„	6,802,417	6,504,280	70,042	145,706	156,168
	„	24,376,208	25,101,275	22,694,986	24,478,008	24,072,558
Sugar :						
Refined or crystallised, including sugarcandy	Cwt.	37,723	34,523	111,323	28,768	37,044
Unrefined, *viz.*, molasses and jaggery or goor, and other saccharine produce	„	1,008,565	978,955	1,309,321	795,973	940,574
	„	1,046,288	1,013,478	1,420,644	824,741	977,618
Tea	Lbs.	87,514,505	97,011,112	103,760,104	107,014,993	120,149,407
Other articles		—	—	—	—	—

No. 9.

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India.

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
I.—ANIMALS, LIVING :					
Horses	14,392	17,695	9,112	12,325	7,730
Other sorts	119,790	94,451	88,973	109,953	94,148
Total Value of Animals, Living	134,182	112,146	98,085	122,278	101,878
II.—ARTICLES OF FOOD AND DRINK :					
Coffee	1,529,630	1,884,243	1,489,872	1,454,985	1,998,659
Fruits and Vegetables :					
Fruits :					
Cocoanuts	785	1,265	1,496	758	910
,, Kernel or Copra	25,969	39,952	6,928	7,998	36,008
Other sorts	3,420	3,668	1,942	3,031	1,714
Vegetables, fresh	36,809	37,440	41,824	37,771	45,907
	65,983	82,325	52,190	49,558	84,539
Grain and Pulse :					
Gram	95,163	93,714	116,493	103,346	115,018
Jowari and Bajra	184,762	198,422	313,822	350,403	491,306
Pulse	355,700	167,136	120,194	115,256	249,110
Oats	19,405	18,235	42,723	26,400	25,849
Rice in the husk	66,578	70,058	63,151	104,111	89,178
,, not in the husk	9,225,109	7,845,350	10,047,331	12,773,629	13,296,792
Wheat	5,562,373	7,522,676	5,791,377	6,042,426	14,380,462
Other sorts	31,383	28,089	33,134	23,727	47,965
	15,540,473	15,943,680	16,528,225	19,539,298	28,695,680
Liquors :					
Spirits :					
Rum	12	26	448	494	11,594
Other sorts	105	25	0	15,643	4,422
Other sorts	0	5	10	0	0
	117	56	458	16,137	16,016
Provisions :					
Biche de mer	2,549	580	445	766	661
Fishmaws and Sharkfins	79,364	70,094	59,315	79,982	73,567
Flour	197,555	207,925	283,767	272,890	361,586
Fruits and Vegetables—dried, salted, or preserved	38,533	55,269	48,540	47,118	75,163
Ghee	89,708	79,197	89,563	89,193	87,522
Lard	22,411	18,792	22,884	20,685	21,775
Salted fish	44,660	62,977	50,249	62,316	73,828
Dried fish, not salted			10,511	12,333	13,311
Other sorts	55,834	58,649	59,151	48,094	69,118
	530,614	553,483	624,425	633,377	776,531
Spices :					
Betelnuts	8,439	4,267	3,716	2,545	4,421
Cardamoms	20,486	40,033	18,385	18,928	31,896
Chillies	0	0	64,728	65,178	74,021
Cinnamon	314	391	426	598	641
Ginger	140,812	131,751	70,398	45,431	63,887
Nutmegs	87	23	0	106	229
Pepper	292,909	316,833	304,359	317,462	229,163
Other sorts	58,511	66,908	2,111	6,809	4,720
	521,558	560,206	464,123	455,057	408,978
Sugar :					
Refined or crystallised, including sugar-candy	46,239	43,362	149,132	38,375	47,114
Unrefined, *viz.*, molasses and jaggery or goor, and other saccharine produce	419,590	506,977	768,047	379,187	461,303
	465,829	550,339	917,179	417,562	508,417
Tea	5,174,440	5,267,315	5,277,649	5,219,233	5,968,129
Other articles	4	263	2	13	5
Total Value of Articles of Food and Drink	23,829,698	24,841,910	25,354,123	27,785,220	38,456,954

No. 8—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
III.—METALS AND MANUFACTURES OF:						
Metals:						
Brass:						
Unwrought	Cwt.	0	0	0	0	14
Wrought	,,	1,858	1,860	2,027	2,043	2,680
Copper:						
Old, for re-manufacture	,,	9	26	12	31	2
Wrought:						
Sheets and other manufactures	,,	2,161	1,404	2,953	2,216	2,154
Iron:						
Ore	,,	0	0	0	0	1
Cast (pig)	,,	0	9	0	0	0
Old, for re-manufacture	,,	330	322	264	266	137
Wrought:						
Anchors, Cables, and Kentledge	,,	1,211	1,562	1,191	2,291	2,129
Nails, Screws, and Rivets	,,	1,434	1,714	2,891	2,682	2,538
Other manufactures of wrought or cast iron, or of iron mixed with steel	,,	2,400	2,799	3,189	4,384	4,568
Lead	,,	506	864	637	1,256	6,274
Tin:						
Unwrought (block)	,,	564	441	674	456	1,436
Wrought (including plates or sheets, not tinned iron)	,,	3	12	1	0	0
Zinc or Spelter	,,	17	1	1	4	0
Unenumerated	,,	282	175	192	205	356
	,,	10,775	11,189	14,032	15,834	22,289
Hardware and Cutlery (including plated ware)		—	—	—	—	—
Machinery and Millwork		—	—	—	—	—
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:						
Chemicals		—	—	—	—	—
Drugs, Medicines and Narcotics:						
Aloes	Cwt.	21	64	241	58	41
Asafœtida	,,	4	13	243	372	514
Camphor	Lbs.	11,106	12,410	4,880	5,063	7,481
Cinchona Bark	,,	1,449,313	3,074,090	1,854,632	2,995,845	2,693,859
Galangal	Cwt.	952	1,161	613	1,352	1,679
Other sorts		—	—	—	—	—
Opium	Chests	90,096	87,789	85,166	85,753	87,558
	=Cwt.	124,871	122,160	118,598	119,627	121,701
Tobacco:						
Unmanufactured	Lbs.	10,888,807	6,799,880	6,312,297	7,554,905	7,514,893
Manufactured:						
Cigars	,,	296,829	370,075	354,429	410,615	457,887
Other sorts	,,	254,819	175,269	194,143	193,146	306,913
	,,	11,440,455	7,345,224	6,860,869	8,158,666	8,279,693
Dyeing and Tanning Materials:						
Cutch	Cwt.	273,068	290,896	221,986	156,493	197,059
Gambier	,,	0	1	0	0	5
Indigo	,,	139,644	142,447	157,116	118,425	125,327
Lac-dye	,,	279	334	329	163	45
Myrabolams	,,	680,207	628,059	781,741	655,195	790,802
Safflower	,,	2,074	2,834	1,647	3,562	1,525
Turmeric	,,	162,516	43,325	36,790	28,250	42,391
Other sorts	,,	24,694	33,855	45,656	38,221	24,183
	,,	1,282,482	1,141,751	1,245,265	1,000,309	1,181,337

No. 9—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
III.—METALS AND MANUFACTURES OF:					
Metals:					
Brass:					
Unwrought	0	0	0	0	73
Wrought	22,271	22,165	22,026	21,417	26,429
Copper:					
Old, for re-manufacture	28	99	50	112	7
Wrought:					
Sheets and other manufactures	14,320	10,598	17,599	14,945	15,393
Iron:					
Ore	0	0	0	0	1
Cast (pig)	0	6	0	0	0
Old, for re-manufacture	47	49	41	39	25
Wrought:					
Anchors, Cables, and Kentledge	950	1,392	1,058	1,944	1,654
Nails, Screws, and Rivets	1,470	1,776	2,950	2,689	2,569
Other manufactures of wrought or cast iron, or of iron mixed with steel	2,315	2,994	3,173	4,498	4,447
Lead	465	1,013	564	900	5,254
Tin:					
Unwrought (block)	4,321	2,739	3,697	2,385	7,613
Wrought (including plates or sheets, not tinned iron)	10	51	5	0	2
Zinc or Spelter	116	1	2	2	0
Unenumerated	1,833	1,103	961	1,337	2,432
	48,146	43,986	52,126	50,268	65,899
Hardware and Cutlery (including plated ware)	6,709	9,361	11,055	10,258	10,995
Machinery and Millwork	88	176	92	618	125
Total Value of Metals and Manufactures of	54,943	53,523	63,273	61,144	77,019
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
Chemicals	6,758	4,992	6,089	6,156	9,659
Drugs, Medicines and Narcotics.					
Aloes	28	69	283	68	64
Asafœtida	23	60	381	622	927
Camphor	380	520	262	368	537
Cinchona Bark	133,277	201,016	118,635	133,780	97,986
Galangal	619	778	387	941	1,187
Other sorts	86,595	88,726	95,505	98,854	84,336
	220,922	291,169	215,453	234,633	185,037
Opium	10,067,764	10,508,081	10,115,936	9,261,814	9,562,261
Tobacco:					
Unmanufactured	102,276	66,767	68,734	90,780	90,178
Manufactured:					
Cigars	24,234	34,791	35,549	40,352	42,672
Other sorts	2,942	2,191	2,672	2,720	3,838
	129,452	103,749	106,955	133,852	136,688
Dyeing and Tanning Materials:					
Cutch	433,847	442,322	333,400	236,355	317,296
Gambier	0	4	0	0	3
Indigo	3,890,649	3,948,595	3,863,084	3,073,125	3,214,077
Lac-dye	620	804	3[illegible]8	502	250
Myrabolams	250,618	249,337	317,533	300,714	393,690
Safflower	7,662	9,423	3,574	4,948	1,976
Turmeric	93,038	20,565	20,081	24,155	45,476
Other sorts	6,613	6,420	7,832	6,966	6,018
	4,683,047	4,677,470	4,546,372	3,646,765	3,978,786
Total Value of Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials	15,107,943	15,585,461	14,990,805	13,283,220	13,872,431

No. 8—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
V.—OILS:					
Oils:					
Animal - - - - Gals.	32,339	16,580	2,874	13,568	577
Essential - - - - ,,	15,622	15,270	12,128	15,311	16,426
Mineral - - - - ,,	29,249	26,417	24,339	44,840	43,388
Vegetable, not Essential:					
Dregs of Jinjili Oil - - Cwt.	41,196	49,703	50,308	48,434	56,697
Castor - - - - Gals.	2,677,005	2,092,913	2,664,990	3,157,234	3,273,980
Cocoanut - - - - ,,	1,203,660	1,525,910	1,369,532	924,251	1,396,186
Earthnut - - - - ,,	1,671	224	9,620	13,374	30,703
Til or Jinjili - - - ,,	76,311	72,159	91,120	76,120	77,436
Other sorts - - - - ,,	126,242	92,259	164,796	194,896	216,189
Total Quantity of Oils - { Gals.	4,162,099	3,841,732	4,339,399	4,439,594	5,054,885
& Cwt.	41,196	49,703	50,308	48,434	56,697
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Borax - - - - Cwt.	15,395	7,652	6,717	6,825	9,253
Canes and Rattans - - - ,,	6,484	3,567	1,920	5,466	6,358
Caoutchouc, raw - - - ,,	9,228	8,673	9,934	9,292	9,334
Coal, &c. - - - - - Tons	315	15,796	39,972	26,336	4,515
Coir, unmanufactured - - Cwt.	7,912	16,802	18,701	22,495	29,204
Cotton, raw - - - - ,,	5,374,542	5,331,536	6,320,342	5,913,923	4,424,947
Feathers - - - - Lbs.	80,108	93,995	71,460	75,378	106,910
Flax, raw - - - - ,,	0	0	2,750	0	0
Gums and Resins - - - Cwt.	37,132	62,645	38,905	36,729	38,565
Hemp, raw - - - - ,,	137,679	131,530	111,160	56,318	75,736
Hides and Skins:					
Hides, raw - - - - { No.	6,817,653	6,606,142	6,454,895	6,803,566	6,707,397
= Cwt.	570,843	533,754	486,626	492,553	503,682
Skins, raw - { No.	3,817,124	4,356,561	3,906,711	5,377,855	6,715,953
= Cwt.	38,752	41,590	37,993	60,846	79,464
Horns - - - - Cwt.	68,018	62,136	70,397	61,755	85,189
Ivory, unmanufactured - - Lbs.	13,022	11,495	10,863	13,326	7,245
Jewellery, &c.:					
Precious Stones and Pearls, unset - -	—	—	—	—	—
Jute, raw - - - - Cwt.	9,643,484	10,553,143	10,255,904	11,985,967	8,532,430
Lac, stick - - - - ,,	562	126	0	90	215
Manures:					
Animal Bones - - - Tons	26,325	35,393	44,400	61,410	43,766
Other sorts - - - - ,,	1,228	978	1,273	1,288	1,211
Mica (commercially called Talc) - Cwt.	713	1,604	2,632	6,384	2,325
Mowa or Mowra Flowers - - ,,	248	90	22	2,946	20,710
Musk - - - - - Oz.	2,144	4,934	7,208	3,282	4,113
Natural Curiosities - - - -	—	—	—	—	—
Rags and other materials for making paper - - - - Cwt.	125,988	135,969	116,952	95,815	95,005
Saltpetre - - - - - ,,	386,396	420,503	422,229	399,690	389,185
Seeds:					
Essential:					
Ajama - - - - ,,	2,331	1,513	2,023	3,018	1,680
Ajowan - - - - ,,	357	505	217	472	414
Aniseed - - - - ,,	857	757	1,110	2,826	1,361
Coriander - - - - ,,	32,056	38,488	35,678	38,233	40,650
Cummin - - - - ,,	14,110	11,117	11,351	11,653	11,736
,, black - - - - ,,	1,310	804	467	743	824
Fennel - - - - ,,	4,353	2,965	1,426	3,331	6,557
Fenugreek - - - ,,	357	1,153	725	676	770
Sawa or Dill-seed - - - ,,	721	220	167	279	285
Other sorts - - - ,,	278	236	325	327	13,303
Castor - - - - ,,	764,293	585,769	894,631	859,772	835,925
Cotton - - - - ,,	*	135,582	38,381	18,767	16,295
Earthnuts - - - - ,,	1,261,637	827,997	1,394,191	1,525,238	1,529,940
Linseed - - - - ,,	8,422,703	8,461,374	7,146,896	8,077,301	10,866,592
Mowa or Mowra - - - ,,	134,203	75,489	46,343	23,695	136,722
Mustard - - - - ,,	42,526	37,878	18,195	35,199	52,814
Poppy - - - - ,,	456,308	730,455	482,893	678,511	616,434
Rape - - - - ,,	2,081,300	3,061,586	3,904,150	1,554,708	2,615,865
Til or Jinjili - - - ,,	2,747,270	1,537,444	1,775,559	1,846,732	2,302,172
Other sorts - - - ,,	92,430	58,646	40,014	117,518	114,183
,,	16,060,400	15,569,978	15,794,742	14,798,999	19,164,522

* Included with "Other sorts."

No. 9—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
V.—OILS:					
Oils:					
Animal	1,498	912	163	636	45
Essential	22,366	26,780	20,277	24,810	24,529
Mineral	1,658	1,534	1,612	2,580	2,002
Vegetable, not Essential:					
Dregs of Jinjili Oil	8,171	10,060	10,359	9,950	15,039
Castor	264,282	203,147	328,316	373,365	342,123
Cocoanut	148,386	165,338	146,617	102,545	154,939
Earthnut	161	24	1,101	1,506	3,363
Til or Jinjili	8,482	9,864	13,122	9,363	10,011
Other sorts	16,052	12,647	22,378	27,148	31,760
Total Value of Oils	471,056	430,306	543,945	551,903	583,811
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Borax	22,697	12,870	10,092	10,877	14,292
Canes and Rattans	5,918	2,390	1,257	5,066	5,413
Caoutchouc, raw	115,433	96,735	113,750	117,318	117,237
Coal, &c.	326	15,030	38,905	26,388	4,649
Coir, unmanufactured	5,135	11,948	12,397	15,855	20,478
Cotton, raw	14,412,842	15,045,648	18,668,404	16,502,775	10,754,312
Feathers	57,049	46,888	28,418	20,326	23,515
Flax, raw	0	0	28	0	0
Gums and Resins	175,496	282,800	131,562	97,828	91,889
Hemp, raw	125,156	111,894	97,313	42,229	64,360
Hides and Skins:					
Hides, raw	2,022,040	1,747,487	1,664,854	1,695,401	1,723,884
Skins, raw	303,676	381,956	335,399	465,154	643,159
Horns	164,394	161,123	194,286	203,060	333,762
Ivory, unmanufactured	7,331	6,278	6,570	8,290	4,540
Jewellery, &c.					
Precious Stones and Pearls, unset	12,163	10,821	9,602	11,669	10,492
Jute, raw	6,040,379	7,897,154	8,639,861	7,602,010	6,848,494
Lac, stick	1,131	265	0	179	694
Manures:					
Animal Bones	132,750	174,077	242,749	335,773	230,957
Other sorts	762	1,896	3,140	3,630	5,857
Mica (commercially called Talc)	15,457	35,983	56,224	91,303	42,871
Mowa or Mowra Flowers	62	19	6	440	3,111
Musk	7,212	13,675	19,338	6,825	13,612
Natural Curiosities	10,950	20,855	30,635	16,908	15,524
Rags and other materials for making paper	47,292	56,487	52,417	35,090	27,096
Saltpetre	364,016	401,801	411,276	380,059	365,618
Seeds:					
Essential:					
Ajama	1,225	835	1,105	1,536	1,018
Ajowan	275	288	138	297	245
Aniseed	725	625	1,192	3,058	1,144
Coriander	18,863	23,808	19,395	20,111	21,131
Cummin	20,629	17,135	20,023	19,230	18,273
,, black	1,281	638	377	529	665
Fennel	3,126	2,153	1,252	3,204	5,811
Fenugreek	200	650	474	447	477
Sawa or Dill-seed	338	127	113	163	180
Other sorts	192	193	249	223	6,847
Castor	339,353	312,874	607,429	514,785	449,037
Cotton	*	30,158	8,870	3,685	4,152
Earthnuts	611,844	478,981	813,865	877,329	875,851
Linseed	4,932,575	5,057,922	4,734,691	4,984,123	6,793,440
Mowa or Mowra	53,946	32,533	19,568	10,363	55,574
Mustard	22,751	22,218	12,934	26,711	38,682
Poppy	277,657	476,173	367,963	474,141	406,514
Rape	1,175,409	1,916,749	2,685,154	979,570	1,708,952
Til or Jinjili	1,877,050	1,147,002	1,309,881	1,356,980	1,765,340
Other sorts	47,585	40,694	22,880	66,767	55,125
	9,385,024	9,561,756	10,627,553	9,343,252	12,208,458

* Included with "Other sorts."

No. 8—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*						
Silk :						
Raw	Lbs.	453,568	433,473	593,425	502,603	518,705
Chasam	„	998,235	1,313,874	1,233,494	1,112,213	1,012,254
Cocoons	„	173,374	374,567	262,843	145,695	131,560
Stone and Marble	Cwt.	8,715	9,528	18,123	7,726	12,185
„ Jade	„	3,907	4,898	5,174	2,846	2,855
Tallow	„	4,719	3,759	2,690	3,146	2,946
Wax (excluding candles)	„	11,747	10,611	12,142	14,999	19,449
Wood :						
Teak	Cubic Tons	40,446	52,609	71,342	42,803	48,190
Other Timber	Tons	1,477	1,511	2,533	3,637	3,844
Firewood	„	1	110	132	0	3
Ornamental :						
Sandal		—	—	—	—	—
Ebony		—	—	—	—	—
Other sorts		—	—	—	—	—
Wool, raw	Lbs.	23,877,031	21,960,848	23,870,232	21,344,843	22,314,403
All other Articles		—	—	—	—	—
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED :						
Yarns and Textile Fabrics :						
Cotton :						
Twist and Yarn	Lbs.	113,451,375	128,906,764	141,949,951	169,275,304	161,253,234
Manufactures :						
Piece goods :						
Grey (unbleached)	Yards	52,975,411	54,938,813	45,060,511	53,196,246	56,627,542
White (bleached)	„	212,424	116,355	126,906	67,645	112,962
Coloured, Printed, or Dyed	„	16,246,855	15,189,059	14,275,099	14,375,003	16,610,271
Handkerchiefs and Shawls in the piece	No.	930,013	1,073,077	1,224,019	1,868,988	1,938,177
Other sorts	Yards	51,057	21,122	33,035	27,035	33,166
Hosiery, pure and mixed		—	—	—	—	—
Thread, sewing	Lbs.	65,671	50,739	52,283	49,834	40,231
Canvas	Yards	1,900	1,856	3,357	13,390	8,737
Other sorts	Lbs.	2,413,771	1,851,855	1,409,752	2,590,962	4,186,292
Flax :						
Twist and Yarn	Lbs.	364	0	0	672	0
Manufactures :						
Piece goods	Yards	11,523	8,254	17,501	6,383	5,150
Canvas	Yards	334	0	228	551	120
Other sorts (including bags and sacks)	Lbs.	8,221	4,120	13,222	8,684	16,058
Hemp :						
Manufactures (excluding cordage) :						
Cloth	Yards	95	49	200	3,775	11,333
Bags and Sacks	No.	2,549	520	200	7,685	0
Jute :						
Manufactures :						
Gunny Bags — Power-loom	No.	73,866,774	98,720,245	96,784,220	98,749,416	106,250,612
Gunny Bags — Hand-loom	„	500,846	1,070,342	631,675		
Gunny Cloths — Power-loom	Yards	13,604,204	14,979,288	37,126,737	29,854,029	37,289,300
Gunny Cloths — Hand-loom	„	78,708	181,304	17,270		
Rope and Twine	Cwt.	4,936	9,033	8,913	6,609	2,482
Other sorts	„	85	88	13,428	8,973	619
Silk :						
Manufactures :						
Thread for sewing, &c.	Lbs.	113	1,033	0	900	0
Piece goods	Yards	3,522,528	2,807,203	2,330,360	2,002,959	1,728,969
Goods of silk mixed with other materials	„	210,782	169,035	184,500	221,121	211,467
Other sorts	Lbs.	20,411	15,225	0	12	312

No. 9—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Silk :					
Raw	348,564	317,796	463,298	382,424	394,922
Chasam	108,575	144,125	135,359	118,003	105,439
Cocoons	23,672	56,830	41,161	20,642	18,266
Stone and Marble	5,587	5,877	3,714	3,599	7,553
„ Jade	55,351	65,404	81,935	60,720	52,122
Tallow	7,904	7,168	5,100	5,431	5,467
Wax (excluding candles)	51,346	42,096	41,612	59,245	64,973
Wood :					
Teak	367,274	575,263	762,998	425,303	474,852
Other Timber	6,486	6,035	10,334	16,587	19,028
Firewood	4	105	135	3	2
Ornamental :					
Sandal	65,132	50,501	63,945	79,482	81,083
Ebony	48	123	181	204	2,927
Other sorts	52	308	69	390	184
Wool, raw	972,346	968,753	1,085,637	968,322	1,013,864
All other Articles	153,121	171,691	200,396	319,840	364,336
Total Value of Raw Materials and Unmanufactured Articles	35,600,153	38,509,911	44,291,911	39,497,900	36,179,292
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED :					
Yarns and Textile Fabrics :					
Cotton :					
Twist and Yarn	4,077,387	5,207,100	5,748,732	6,543,364	5,771,033
Manufactures :					
Piece goods :					
Grey (unbleached)	603,406	646,698	503,612	616,409	649,096
White (bleached)	12,442	4,650	5,632	2,249	6,793
Coloured, Printed, or Dyed	447,252	431,874	401,935	421,757	476,294
Handkerchiefs and Shawls in the piece	47,070	52,352	64,525	80,541	89,252
Other sorts	4,343	1,589	1,988	1,640	2,027
Hosiery, pure and mixed	1,315	1,904	2,471	1,374	2,352
Thread, sewing	4,651	3,973	4,181	3,909	3,227
Canvas	100	83	134	382	319
Other sorts	29,963	24,341	20,533	31,014	43,603
	1,150,542	1,167,464	1,005,011	1,159,275	1,264,003
Flax :					
Twist and Yarn	5	0	0	6	0
Manufactures :					
Piece goods	565	556	1,183	474	386
Canvas	5	0	18	18	2
Other sorts (including bags and sacks)	404	284	507	818	928
Hemp :					
Manufactures (excluding cordage) :					
Cloth	8	1	5	83	229
Bags and Sacks	29	8	2	86	0
Jute :					
Manufactures :					
Gunny Bags { Power-loom	1,615,089	2,378,423	2,851,078	2,180,022	2,195,238
Gunny Bags { Hand-loom	9,816	22,343	15,057		
Gunny Cloths { Power-loom	115,125	157,558	394,082	282,801	313,816
Gunny Cloths { Hand-loom	871	1,831	186		
Rope and Twine	5,096	11,096	11,025	7,208	3,238
Other sorts	363	227	19,814	11,931	808
	1,746,360	2,571,478	2,791,242	2,481,962	2,513,100
Silk :					
Manufactures :					
Thread for sewing, &c. :	53	653	0	1,440	0
Piece goods	352,176	268,465	239,893	178,695	159,582
Goods of silk mixed with other materials	25,073	18,160	20,828	23,044	24,040
Other sorts	1,994	1,209	0	2	335
	379,296	288,487	260,721	203,181	183,957

No. 8—*concluded.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*concluded.*

ARTICLES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Yarns and Textile Fabrics—*cont.*						
Wool :						
Manufactures :						
Piece goods	Yards	212,203	196,015	207,783	222,546	234,840
Shawls	No.	12,646	8,144	7,252	4,580	4,080
Other sorts	Lbs.	525,384	691,653	751,363	553,839	598,810
Apparel (excluding hosiery)		—	—	—	—	—
Books and Printed Matter (including maps and charts)	Cwt.	3,129	3,864	3,406	3,380	3,792
Cabinet-ware and Furniture		—	—	—	—	—
Coir, manufactures of (excluding cordage)	Cwt.	178,493	195,187	259,661	222,878	289,343
Cordage and Rope of vegetable fibre (excluding jute)	„	20,137	26,851	32,710	32,025	32,808
Earthenware and Porcelain		—	—	—	—	—
Glass		—	—	—	—	—
Hides and Skins:						
Hides, dressed or tanned	No.	1,518,565	1,447,544	1,349,446	1,261,063	1,677,654
	=Cwt.	106,604	100,381	96,673	98,557	106,857
Skins, dressed or tanned	No.	18,760,809	19,946,919	19,244,116	19,291,167	20,761,341
	=Cwt.	165,845	172,579	164,043	173,819	183,544
Ivory, manufactured		—	—	—	—	—
Jewellery, &c.:						
Jewellery		—	—	—	—	—
Plate		—	—	—	—	—
Lac:						
Button	Cwt.	25,146	21,195	19,837	34,445	25,602
Shell	„	124,050	81,390	70,096	112,495	110,276
Other sorts	„	321	766	305	220	1,588
	„	149,517	103,351	90,238	147,160	137,466
Leather :						
Unwrought	„	94	236	148	143	130
Manufactures of :						
Saddlery and Harness		—	—	—	—	—
Other sorts		—	—	—	—	—
Mats	Sq. Yds.	154,198	86,367	105,255	102,872	99,184
Oil-cake	Cwt.	221,559	258,008	297,471	334,023	402,090
Perfumery (other than musk)		—	—	—	—	—
Soap	Cwt.	7,522	8,258	6,851	8,584	10,405
Toys and Requisites for Games		—	—	—	—	—
Wood, manufactures of		—	—	—	—	—
Articles (not specified) exported by Post		—	—	—	—	—
All other Articles		—	—	—	—	—

No. 9—*concluded.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*concluded.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Wool:					
Manufactures:					
Piece goods	9,346	14,625	12,742	9,527	10,217
Shawls	40,599	26,601	30,247	24,371	13,654
Other sorts	64,113	80,879	82,812	70,268	70,918
	114,058	122,105	125,801	104,166	94,789
Total Yarns and Textile Fabrics	7,468,659	9,357,463	9,933,222	10,493,131	9,828,427
Apparel (excluding hosiery)	97,638	112,980	113,318	103,429	119,204
Books and Printed Matter (including maps and charts)	25,651	31,006	28,758	30,389	33,098
Cabinet-ware and Furniture	23,404	24,405	27,259	27,177	28,210
Coir, manufactures of (excluding cordage)	161,174	173,898	235,204	194,802	244,929
Cordage and Rope of vegetable fibre (excluding jute)	27,359	33,948	38,608	38,106	37,888
Earthenware and Porcelain	4,259	5,368	4,984	7,812	3,633
Glass	2,889	4,181	3,888	2,962	3,889
Hides and Skins:					
Hides, dressed or tanned	605,809	565,760	533,909	491,999	647,269
Skins, dressed or tanned	1,920,857	2,048,343	1,990,099	2,043,364	2,171,689
Ivory, manufactured	102	20	21	102	20
Jewellery, &c.:					
Jewellery	18,711	26,317	13,924	14,907	15,117
Plate	5,515	7,366	9,773	13,455	10,210
Lac:					
Button	79,196	78,870	114,227	185,689	137,901
Shell	420,327	319,413	373,087	594,860	606,793
Other sorts	614	1,727	1,199	715	5,837
	500,137	400,010	488,513	781,264	750,531
Leather:					
Unwrought	891	1,866	1,188	1,103	1,234
Manufactures of:					
Saddlery and Harness	2,227	2,497	3,030	2,356	1,887
Other sorts	659	349	409	505	860
	3,777	4,712	4,627	3,964	3,981
Mats	2,088	1,226	1,939	1,854	1,907
Oil-cake	52,481	64,397	74,721	88,442	104,520
Perfumery (other than musk)	6,070	4,844	4,241	4,962	6,349
Soap	7,638	8,505	5,925	7,468	8,768
Toys and Requisites for Games	27,373	29,786	29,188	21,805	24,953
Wood, manufactures of	27,813	28,361	32,456	35,915	31,387
Articles (not specified) exported by Post	145,820	126,976	127,066	131,587	141,672
All other Articles	36,823	49,605	57,269	61,632	61,795
Total Value of Articles Manufactured and partly Manufactured	11,172,047	13,109,477	13,758,912	14,600,528	14,279,446
GRAND TOTAL	86,370,022	92,642,734	99,101,054	95,902,193	103,550,831

No. 10.

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India.

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
I.—ANIMALS, LIVING:						
Horses	No.	72	46	105	108	216
Other sorts	„	678	0	4	23	81
Total Number of Animals, Living	„	750	46	109	131	297
II.—ARTICLES OF FOOD AND DRINK:						
Coffee	Cwt.	1,808	2,181	1,893	1,565	4,333
Fruits and Vegetables		—	—	—	—	—
Grain and Pulse:						
Gram	Cwt.	0	73	6	15	4
Pulse	„	16	0	0	0	1
Wheat	„	0	1,327	2,985	0	3,275
Other sorts	„	0	1,715	10,858	42	186
	„	16	3,115	13,849	57	3,466
Liquors:						
Ale, Beer, and Porter	Gals.	4,472	4,039	2,951	2,196	3,532
Spirits:						
Brandy	„	2,069	1,000	2,550	2,801	3,184
Gin	„	549	842	198	154	299
Rum	„	2,228	556	16	194	114
Whisky	„	1,240	1,537	3,129	1,782	1,766
Other sorts	„	362	1,087	563	640	160
	„	6,448	5,022	6,456	5,571	5,523
Wines and Liqueurs:						
Champagne	„	587	401	695	1,355	528
Claret	„	1,748	1,343	2,684	702	1,534
Port	„	179	226	881	215	364
Sherry	„	171	214	288	1,042	448
Other sorts	„	2,210	1,081	635	480	3,814
	„	4,895	3,265	5,183	3,794	6,688
Other sorts	„	6	95	6	16	12
Total Liquors	„	15,821	12,421	14,596	11,577	15,755
Provisions:						
Fishmaws and Sharkfins	Lbs.	740,827	960,574	1,235,597	1,037,110	720,308
Fruits and Vegetables—dried, salted, or preserved	Cwt.	80,366	73,802	83,076	71,060	69,673
Ghee	Lbs.	20,707	13,761	8,862	4,023	24,654
Salted Fish	„	182,037	177,660	92,148	186,331	271,546
Dried fish, not salted	„			66,379	19,396	35,250
Other sorts	Cwt.	17,674	7,775	3,693	3,754	3,238
Spices:						
Betelnuts	Lbs.	41,916	136,944	24,640	17,377	37,688
Cardamoms	„	19,005	60,160	936	280	704
Cinnamon	„	21,616	4,809	9,232	5,120	6,494
Cloves	„	4,038,110	3,384,638	3,230,111	2,250,419	1,017,433
Nutmegs	„	109,902	66,571	85,902	114,942	51,530
Pepper	„	77,908	149,050	141,817	84,742	151,254
Other sorts	„	18,900	30,287	10,698	7,310	10,837
	„	4,327,357	3,832,459	3,503,336	2,480,190	1,275,940
Sugar:						
Refined or crystallised, including sugar-candy	Cwt.	149,516	169,725	195,346	160,568	159,568
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	„	1	0	6	0	0
Tea	Lbs.	1,467,841	2,328,756	1,849,429	3,179,826	3,368,662
Other articles		—	—	—	—	—

No. 11.

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India.

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
I.—ANIMALS, LIVING:					
Horses	4,416	1,450	3,509	3,720	4,760
Other sorts	6,694	0	1,050	190	760
Total Value of Animals, Living	11,110	1,450	4,559	3,910	5,520
II.—ARTICLES OF FOOD AND DRINK:					
Coffee	10,045	10,224	10,136	8,802	25,081
Fruits and Vegetables	21,101	32,002	14,975	18,210	3,566
Grain and Pulse:					
Gram	0	30	3	8	2
Pulse	10	0	0	0	1
Wheat	0	603	1,238	0	1,540
Other sorts	0	533	3,363	16	56
	10	1,166	4,604	24	1,599
Liquors:					
Ale, Beer, and Porter	926	1,026	798	513	990
Spirits:					
Brandy	1,563	875	2,067	1,697	2,303
Gin	227	285	92	66	97
Rum	613	65	5	36	30
Whisky	1,057	1,335	2,007	1,065	1,158
Other sorts	201	519	556	264	198
	3,661	3,079	4,727	3,128	3,786
Wines and Liqueurs:					
Champagne	1,200	974	1,208	3,360	1,337
Claret	1,113	722	1,049	454	2,033
Port	189	251	638	207	384
Sherry	159	202	325	955	118
Other sorts	2,103	854	586	501	3,029
	4,764	3,003	3,806	5,477	7,201
Other sorts	3	43	3	47	1
Total Liquors	9,354	7,151	9,334	9,165	11,981
Provisions:					
Fishmaws and Sharkfins	40,408	51,050	64,178	52,506	40,521
Fruits and Vegetables—dried, salted, or preserved	65,086	51,384	59,479	64,379	59,146
Ghee	743	491	313	145	880
Salted Fish	2,130	948	690	1,399	3,481
Dried Fish, not salted			650	101	324
Other sorts	31,038	22,191	12,301	12,771	13,200
	139,405	126,064	137,611	131,301	117,552
Spices:					
Betelnuts	401	1,319	312	189	361
Cardamoms	748	3,185	85	56	63
Cinnamon	375	80	156	149	82
Cloves	202,532	150,443	98,087	51,831	20,532
Nutmegs	13,517	9,105	10,935	13,291	4,252
Pepper	3,305	5,713	5,606	2,504	3,783
Other sorts	1,127	4,571	1,597	733	1,106
	222,005	174,416	116,779	68,753	30,179
Sugar:					
Refined or crystallised, including sugarcandy	183,040	200,704	267,609	197,659	192,628
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	1	0	2	0	0
Tea	128,006	205,823	167,888	285,060	315,741
Other articles	36	435	568	148	4,782
Total Value of Articles of Food and Drink	713,003	757,985	729,456	719,122	703,109

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
III.—METALS AND MANUFACTURES OF:						
Metals:						
Brass:						
Unwrought	Cwt.	0	0	2	0	0
Wrought	„	416	270	626	631	457
		416	270	628	631	457
Copper:						
Old, for re-manufacture	„	12	43	4	22	0
Unwrought:						
Tiles, Ingots, Cakes, and Bricks	„	39,154	4,264	6,502	5,736	10,992
Wrought:						
Lametta	„	16	33	8	0	16
Mixed or Yellow Metal, for sheathing	„	619	235	964	746	861
Sheets and other manufactures	„	7,164	2,208	13,880	10,213	14,382
	„	46,965	6,783	21,358	16,717	26,251
Iron:						
Ore	„	0	0	200	0	0
Old, for re-manufacture	„	310,935	259,409	384,409	168,844	155,297
Cast (pig)	„	4,023	120	200	0	1,500
Wrought:						
Anchors, Cables, and Kentledge	„	341	362	392	512	511
Bar	„	22,798	25,824	19,668	23,510	34,340
Angle, Bolt, and Rod	„	3,854	2,846	5,089	6,982	12,803
Sheets and Plates (including tinned plates)	„	5,087	6,180	5,367	3,516	10,099
Galvanised (other than wire)	„	3,849	4,008	6,054	7,013	4,250
Hoops	„	683	643	314	333	492
Nails, Screws, and Rivets	„	3,404	3,282	2,684	4,165	4,630
Wire	„	226	245	317	294	267
Beams, Pillars, Girders, and Bridgework	„	25	80	480	70	120
Pipes and Tubes	„	571	907	1,159	529	1,054
Rice-bowls	„	18	38	175	117	12
Other manufactures of wrought or cast iron, or of iron mixed with steel	„	196	2,097	812	135	150
	„	356,010	306,041	427,320	216,020	225,525
Lead:						
Ore	„	164	370	257	470	130
Pig	„	4,241	4,047	4,412	2,351	19,067
Wrought:						
Sheets, Pipes, and Tubes	„	16	45	95	113	89
Other sorts	„	184	443	317	406	388
Other sorts	„	540	190	175	240	560
	„	5,145	5,095	5,256	3,580	20,234
Quicksilver	Lbs.	2,579	4,505	3,251	4,283	4,710
Steel:						
Cast	Cwt.	1	5	1	32	9
Hoop	„	41	17	46	9	134
Other sorts	„	1,088	2,731	2,419	3,943	4,518
	„	1,130	2,753	2,466	3,984	4,661
Tin:						
Unwrought (block)	„	1,582	4,931	2,395	2,814	2,308
Wrought (including plates or sheets, not tinned iron)	„	6	4	1	2	2
	„	1,588	4,935	2,396	2,816	2,310
Zinc or Spelter:						
Unwrought	„	299	372	296	412	251
Wrought or manufactured	„	35	52	353	152	77
Other sorts	„	1	0	6	0	0
	„	335	424	655	564	328
Unenumerated	„	22	76	39	34	55
Total Metals	„	411,634	326,417	460,147	244,384	279,863
Hardware and Cutlery (including plated ware)		—	—	—	—	—

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
III.—METALS AND MANUFACTURES OF:					
Metals:					
Brass:					
Unwrought	0	0	6	0	0
Wrought	1,711	1,544	3,317	3,172	2,684
	1,711	1,544	3,323	3,172	2,684
Copper:					
Old, for re-manufacture	30	308	12	72	0
Unwrought:					
Tiles, Ingots, Cakes, and Bricks	168,696	23,082	24,168	21,559	39,864
Wrought:					
Lametta	333	519	151	0	263
Mixed or Yellow Metal, for sheathing	2,089	1,201	3,781	3,008	3,437
Sheets and other manufactures	24,410	12,643	55,502	42,305	62,196
	195,558	37,753	83,614	66,944	105,760
Iron:					
Ore	0	0	10	0	0
Old, for re-manufacture	50,893	47,188	73,089	31,457	29,890
Cast (pig)	768	28	63	0	375
Wrought:					
Anchors, Cables, and Kentledge	298	334	373	515	637
Bar	13,843	16,019	12,584	14,399	21,591
Angle, Bolt, and Rod	2,201	1,707	3,377	4,686	8,732
Sheets and Plates (including tinned plates)	4,752	6,157	4,983	3,232	11,110
Galvanised (other than wire)	3,727	4,308	6,570	6,518	4,249
Hoops	350	366	192	193	263
Nails, Screws, and Rivets	3,234	3,219	2,520	3,953	4,484
Wire	270	269	378	360	331
Beams, Pillars, Girders, and Bridgework	12	48	304	45	73
Pipes and Tubes	461	583	651	455	894
Rice-bowls	18	35	155	32	15
Other manufactures of wrought or cast iron, or of iron mixed with steel	154	1,689	477	123	240
	80,981	81,950	105,726	66,018	82,884
Lead:					
Ore	202	477	308	589	154
Pig	3,551	4,321	4,455	2,344	15,332
Wrought:					
Sheets, Pipes, and Tubes	20	77	115	154	132
Other sorts	238	625	401	554	549
Other sorts	415	133	122	168	532
	4,426	5,633	5,401	3,809	16,699
Quicksilver	329	685	523	781	736
Steel:					
Cast	3	14	3	66	24
Hoop	33	15	56	6	79
Other sorts	823	2,811	2,228	3,217	3,754
	859	2,840	2,287	3,289	3,857
Tin:					
Unwrought (block)	13,471	36,374	16,941	18,297	15,362
Wrought (including plates or sheets, not tinned iron)	39	41	13	25	28
	13,510	36,415	16,954	18,322	15,390
Zinc or Spelter:					
Unwrought	340	533	435	619	393
Wrought or manufactured	54	94	443	287	135
Other sorts	2	0	9	0	0
	396	627	887	906	528
Unenumerated	578	1,062	473	683	815
Total Metals	298,348	168,509	219,188	163,924	229,353
Hardware and Cutlery (including plated ware)	38,497	44,880	47,541	52,651	69,583

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
III.- METALS AND MANUFACTURES OF—*cont.*						
Machinery and Millwork:						
Steam-engines and parts:						
Locomotives (excluding those for railways)		—	—	—	—	—
Other sorts		—	—	—	—	—
Other sorts		—	—	—	—	—
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:						
Chemicals:						
Alum	Cwt.	4,749	2,531	3,494	3,577	4,395
Arsenic	„	140	249	216	204	420
Copperas	„	1,318	1,898	2,201	1,711	3,249
Sal Ammoniac	„	574	668	1,142	1,149	880
Sulphur (Brimstone)	„	151	476	99	260	0
Sulphuric Acid	„	52	513	426	891	218
Other sorts	„	—	—	—	—	—
Drugs, Medicines and Narcotics:						
Aloes	Cwt.	611	487	413	237	579
Asafœtida	„	1,553	2,886	1,587	1,898	596
Camphor:						
Bhimsaini or Baras	Lbs.	7	30	0	0	0
Other sorts	„	39,814	39,569	27,830	49,434	60,637
Cassia lignea	Cwt.	5,209	4,411	6,556	6,944	7,234
Galangal	„	1,216	209	407	98	306
Quinine	Lbs.	711	474	758	1,024	635
Other sorts		—	—	—	—	—
Opium	Cwt.	0	0	0	0	0
Tobacco:						
Unmanufactured	Lbs.	824	0	15,596	300	11,657
Manufactured:						
Cigars	„	2,686	2,765	2,384	2,515	5,190
Other sorts	„	11,255	9,309	40,592	35,838	23,647
		14,765	12,074	58,572	38,653	40,494
Dyeing and Tanning Materials:						
Aniline and Alizarine Dyes	Ozs.	*	*	197,176†	686,292	808,736
Cochineal	Cwt.	124	76	36	51	60
Cutch	„	25	0	7	0	6
Gambier	„	222	177	289	377	377
Madder or Munjeet	„	562	644	653	545	586
Saffron	„	9	44	32	20	84
Other sorts	„	3,471	4,440	1,676	2,058	1,053
V.—OILS:						
Oils:						
Essential	Gals.	43	1	102	64	90
Mineral:						
Kerosine	„	358,635	535,016	258,634	748,312	699,143
Other sorts	„	80	1,491	455	732	12,600
Other sorts	„	11,457	10,340	8,033	10,320	18,287
Total Quantity of Oils	„	370,215	546,848	267,224	759,428	730,120
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:						
Canes and Rattans	Cwt.	2,694	1,740	5,521	1,231	1,295
Caoutchouc, raw	„	289	52	112	27	0
Coal:						
Coal	Tons	127	40	323	311	752
Coke	„	8	32	1	2	79
Cotton, raw	Cwt.	314	45	1,036	11,064	4,732

* Not stated. † Defective.

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92
III.—METALS AND MANUFACTURES OF—*cont.*					
Machinery and Millwork:					
Steam-engines and parts:					
Locomotives (excluding those for railways)	0	0	0	0	0
Other sorts	2,045	5,914	3,018	4,479	4,927
Other sorts	4,684	4,702	4,445	7,162	3,878
	6,729	10,616	7,463	11,641	8,805
Total Value of Metals and Manufactures of	343,574	224,005	274,192	228,216	307,741
IV.—CHEMICALS DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
Chemicals:					
Alum	1,993	1,183	1,566	1,513	1,904
Arsenic	293	429	456	455	964
Copperas	563	862	1,370	1,041	1,672
Sal Ammoniac	1,671	1,904	3,361	3,271	2,530
Sulphur (Brimstone)	76	246	49	156	0
Sulphuric Acid	64	685	518	1,127	256
Other sorts	2,104	1,418	669	823	616
	6,763	6,727	7,989	8,386	7,942
Drugs, Medicines and Narcotics:					
Aloes	3,316	2,292	2,061	773	3,173
Asafœtida	2,745	4,775	2,676	2,634	1,455
Camphor:					
Bhimsaini or Baras	38	270	0	0	0
Other sorts	1,975	2,219	1,778	4,730	5,065
Cassia lignea	7,563	6,217	10,003	9,784	10,130
Galangal	677	174	315	82	234
Quinine	2,168	1,363	1,650	2,526	1,264
Other sorts	10,475	10,117	11,742	9,687	15,136
	28,957	27,427	30,225	30,216	36,457
Opium	0	1	0	0	0
Tobacco:					
Unmanufactured	15	0	435	150	1,135
Manufactured:					
Cigars	830	880	955	673	1,025
Other sorts	849	923	3,186	3,459	2,556
	1,694	1,803	4,576	4,282	4,716
Dyeing and Tanning Materials:					
Aniline and Alizarine Dyes	2,032	4,210	6,180	5,538	5,726
Cochineal	1,315	313	332	481	650
Cutch	46	0	19	0	11
Gambier	354	302	701	789	718
Madder or Munjeet	762	741	698	584	510
Saffron	1,499	6,880	3,969	3,223	8,940
Other sorts	8,279	6,417	3,186	4,366	2,211
	14,287	19,353	15,085	14,981	18,766
Total Value of Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials	51,701	55,311	57,875	57,865	67,881
V.—OILS:					
Oils:					
Essential	638	20	112	103	146
Mineral:					
Kerosine	16,684	26,913	12,304	33,109	30,208
Other sorts	24	297	87	123	1,964
Other sorts	1,699	1,502	1,233	1,705	2,866
Total Value of Oils	19,045	28,732	13,736	35,040	35,184
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Canes and Rattans	2,042	1,619	5,622	1,381	2,214
Caoutchouc, raw	2,576	863	1,210	518	0
Coal:					
Coal	272	104	635	714	1,231
Coke	85	136	5	8	332
Cotton, raw	702	32	2,925	31,168	9,247

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India —*continued.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*						
Gums and Resins:						
Arabic	Cwt.	962	8,620	5,259	3,866	5,733
Benjamin	„	840	1,206	1,125	620	968
Olibanum or Frankincense	„	23,067	21,556	20,516	22,963	24,932
Rosin	„	702	573	1,067	1,083	1,410
Other sorts	„	2,081	4,231	1,456	3,378	5,537
	„	27,652	36,186	29,423	31,910	38,580
Hides and Skins:						
Hides, raw	No.	11,033	80	0	8,000	467
	=Cwt.	1,168	6	0	1,000	60
Skins, raw	No.	70	0	0	0	3,650
	=Cwt.	1	0	0	0	86
Horns	Cwt.	306	459	332	406	386
Ivory, unmanufactured	Lbs.	347,238	393,239	218,776	258,010	261,124
Jewellery, &c.:						
Precious Stones and Pearls, unset		—	—	—	—	—
Lac, stick	Cwt.	4	28	2	2	6
Natural Curiosities		—	—	—	—	—
Pitch, Tar, and Dammer	Cwt.	1,046	1,080	1,344	1,676	2,010
Seeds:						
Rape	„	20,271	0	0	1,800	10
Other sorts	„	1,130	2,194	3,529	1,058	1,156
	„	21,401	2,194	3,529	2,858	1,166
Shells and Cowries:						
Shells (chanks and large ornamental shells)	Cwt. & No.	3 / 652,636	30 / 660,087	110 / 846,401	1,453 / 0	1,856 / 0
Tortoise-shell (including Nakhla or Nakh)	Lbs.	4,875	5,669	8,094	7,957	9,231
Cowries	Cwt.	276	96	183	57	1,438
Silk, raw	Lbs.	109,209	111,832	116,261	145,298	119,919
Stone and Marble	Cwt.	211	122	118	1,056	274
Wax (excluding candles)	„	110	186	214	173	68
Wood:						
Teak	Cubic Tons	138	8	60	113	10
Other Timber	Tons	524	469	536	342	602
Ornamental:						
Sandal		—	—	—	—	—
Ebony		—	—	—	—	—
Other sorts		—	—	—	—	—
Wool, raw	Lbs.	11,207,112	13,156,968	14,402,296	12,788,216	13,341,076
All other Articles		—	—	—	—	—
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:						
Yarns and Textile Fabrics:						
Cotton:						
Twist and Yarn	Lbs.	1,058,963	1,601,596	1,270,444	1,243,380	1,648,822
Manufactures:						
Piece goods:						
Grey (unbleached)	Yards	24,417,720	26,253,232	26,182,731	23,659,913	24,930,037
White (bleached)	„	10,186,129	11,765,655	12,520,316	13,767,057	14,390,232
Coloured, Printed, or Dyed	„	52,905,095	53,426,840	51,973,749	51,471,185	55,558,166
Handkerchiefs and Shawls in the piece	No.	1,386,554	1,804,823	1,559,423	1,750,577	1,869,406
Other sorts	Yards	9,819	983	0	0	0
Lace and Patent Net	„	38,786	27,044	10,413	2,830	10,311
Hosiery, pure and mixed		—	—	—	—	—
Thread, sewing	Lbs.	51,891	73,604	78,166	98,171	147,943
Canvas	Yards	32,966	1,320	60	91	4,453
Other sorts	Lbs.	16,774	14,144	36,101	8,608	7,391

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Gums and Resins :					
Arabic	5,807	51,337	20,629	10,970	12,106
Benjamin	3,213	4,193	3,748	2,142	3,153
Olibanum or Frankincense	44,880	41,989	43,951	40,187	42,152
Rosin	372	297	595	540	670
Other sorts	6,266	11,588	4,688	7,083	10,704
	60,538	109,404	73,611	60,922	68,785
Hides and Skins:					
Hides, raw	3,554	20	0	2,800	147
Skins, raw	6	0	0	0	467
Horns	3,788	5,287	4,186	4,659	4,508
Ivory, unmanufactured	182,467	209,180	125,543	149,457	150,468
Jewellery, &c.:					
Precious Stones and Pearls, unset	9,043	8,944	9,792	11,059	9,947
Lac, stick	10	67	5	6	23
Natural Curiosities	50	60	3	3	64
Pitch, Tar, and Dammer	422	468	581	792	825
Seeds :					
Rape	12,921	0	0	1,120	7
Other sorts	1,244	2,462	3,694	1,618	2,077
	14,165	2,462	3,694	2,738	2,084
Shells and Cowries :					
Shells (chanks and large ornamental shells)	7,374	9,350	10,292	5,776	9,733
Tortoise-shell (including Nakhla or Nakh)	2,442	3,472	6,294	4,802	5,540
Cowries	403	94	164	71	1,593
Silk, raw	42,083	42,745	33,951	40,024	37,498
Stone and Marble	196	137	212	691	181
Wax (excluding candles)	761	1,198	1,340	1,059	506
Wood:					
Teak	1,326	56	410	1,070	86
Other Timber	2,885	1,670	2,363	1,664	2,423
Ornamental:					
Sandal	8	243	215	30	35
Ebony	0	41	0	60	22
Other sorts	2	34	0	3	109
Wool, raw	522,491	619,527	693,527	624,681	630,839
All other Articles	1,324	1,511	841	1,081	771
Total Value of Raw Materials and Unmanufactured Articles	860,965	1,018,724	977,421	947,237	939,678
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:					
Yarn and Textile Fabrics:					
Cotton:					
Twist and Yarn	69,345	111,514	91,382	83,801	113,665
Manufactures :					
Piece goods :					
Grey (unbleached)	348,772	356,614	376,386	345,872	354,596
White (bleached)	164,424	188,181	200,494	213,878	222,077
Coloured, Printed, or Dyed	1,095,255	1,107,944	1,093,100	1,094,214	1,171,875
Handkerchiefs and Shawls in the piece	24,648	33,896	35,202	35,054	39,310
Other sorts	148	12	0	0	0
Lace and Patent Net	1,015	498	319	89	297
Hosiery, pure and mixed	6,904	9,484	12,714	10,213	11,955
Thread, sewing	5,470	7,895	8,933	10,794	16,424
Canvas	823	40	1	3	115
Other sorts	853	604	109	376	515
	1,648,312	1,705,168	1,728,358	1,710,493	1,817,165

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Flax:					
Twist and Yarn - - - Lbs.	896	240	430	708	635
Manufactures:					
Piece goods - - - Yards	3,384	1,458	9,977	8,709	6,680
Canvas - - - - „	9,795	10,901	16,264	18,770	7,445
Other sorts (including bags and sacks) - - - - Lbs.	7,090	9,721	5,764	7,170	3,095
Hemp:					
Manufactures (excluding cordage):					
Cloth - - - - - Yards	400	280	4,336	720	0
Jute:					
Manufactures - - - - -	—	—	—	—	—
Silk:					
Manufactures:					
Thread for sewing, &c. - Lbs.	373	131	0	39	649
Piece goods - - - Yards	415,423	585,021	564,152	644,352	693,135
Goods of silk mixed with other materials - - - „	69,984	83,059	53,032	61,633	47,741
Other sorts - - - Lbs.	0	0	0	4	0
Wool:					
Manufactures:					
Piece goods - - - Yards	325,178	460,891	329,609	430,000	482,278
Shawls - - - - No.	4,279	10,961	10,718	25,722	28,226
Braids - - - - Lbs.	0	295	0	0	224
Other sorts - - „	202,117	251,116	317,214	227,555	171,586
Apparel (including haberdashery, millinery, boots and shoes, &c., but excluding hosiery) - -	—	—	—	—	—
Arms, Ammunition, &c. (excluding military accoutrements):					
Fire-arms and parts thereof - - -	—	—	—	—	—
Gunpowder, common - - - Lbs.	0	0	725	1,900	0
„ sporting - - - „	192	13	141	250	30
Other sorts - - - - - -	—	—	—	—	—
Art, works of - - - -	—	—	—	—	—
Books and Printed Matter (including maps and charts) - - - - Cwt.	898	718	748	609	863
Building and Engineering Materials - - -	—	—	—	—	—
Cabinet-ware and Furniture - - - -	—	—	—	—	—
Candles - - - - - - Lbs.	86,810	63,483	107,117	99,869	129,627
Caoutchouc, manufactures of - - -	—	—	—	—	—
Carriages, Carts, &c. (excluding railway carriages), and parts thereof - - - -	—	—	—	—	—
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain) -	—	—	—	—	—
Clocks and Watches - - - - No.	2,858	3,113	4,383	2,432	3,723
Corals, Real - - - - - Lbs.	9,005	11,837	18,676	28,770	23,628
Cordage and Rope of vegetable fibre (excluding jute) - - - Cwt.	232	267	277	313	353
Corks - - - - - - „	31	21	3	14	1
Earthenware and Porcelain - - - -	—	—	—	—	—
Fireworks - - - - - - -	—	—	—	—	—
Glass:					
Sheet and Plate - - - Supl. Feet	267,186	246,959	138,304	118,967	320,110
Beads and False Pearls - - - Cwt.	1,592	1,976	2,017	2,080	1,942
Bottles, common - - - - „	1,272	1,291	687	877	860
Other ware - - - - -	—	—	—	—	—

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Flax:					
Twist and Yarn	21	9	16	21	26
Manufactures:					
Piece goods	128	54	553	320	234
Canvas	436	425	585	601	305
Other sorts (including bags and sacks)	676	679	691	670	403
	1,240	1,158	1,829	1,591	942
Hemp:					
Manufactures (excluding cordage):					
Cloth	35	14	133	26	0
Jute:					
Manufactures	47	26	20	0	94
Silk:					
Manufactures:					
Thread for sewing, &c.	328	63	0	36	523
Piece goods	39,138	55,488	51,956	58,428	60,747
Goods of silk mixed with other materials	7,062	8,901	5,802	6,207	5,712
Other sorts	0	0	0	6	0
	46,528	64,452	57,758	64,677	66,982
Wool:					
Manufactures:					
Piece goods	33,813	42,818	32,922	44,935	53,856
Shawls	1,123	2,086	2,132	3,052	3,143
Braids	0	83	0	0	50
Other sorts	20,734	32,406	15,294	17,133	21,253
	55,670	77,393	50,348	65,120	78,302
Total Yarns and Textile Fabrics	1,821,198	1,959,734	1,929,844	1,925,729	2,077,176
Apparel (including haberdashery, millinery, boots and shoes, &c., but excluding hosiery)	92,210	91,293	103,457	102,503	100,038
Arms, Ammunition, &c. (excluding military accoutrements):					
Fire-arms and parts thereof	5,807	7,250	6,911	7,946	8,650
Gunpowder, common	0	0	29	63	0
„ sporting	19	1	20	25	6
Other sorts	5,395	660	762	2,195	477
	11,221	7,911	7,722	10,229	9,133
Art, works of	1,012	1,523	2,210	1,944	3,925
Books and Printed Matter (including maps and charts)	15,344	11,158	13,282	10,271	12,659
Building and Engineering Materials	719	457	1,933	1,505	1,100
Cabinet-ware and Furniture	5,216	6,371	7,717	7,342	10,481
Candles	2,934	2,032	3,465	3,103	4,123
Caoutchouc, manufactures of	530	772	1,058	1,442	825
Carriages, Carts, &c. (excluding railway carriages), and parts thereof	1,794	1,542	1,274	2,521	1,048
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain)	4,650	5,390	5,335	4,981	5,494
Clocks and Watches	4,245	3,603	5,799	3,958	4,063
Corals, Real	9,680	12,567	16,618	23,982	18,752
Cordage and Rope of vegetable fibre (excluding jute)	656	624	830	788	868
Corks	362	319	84	176	15
Earthenware and Porcelain	16,582	19,528	23,472	19,935	30,258
Fireworks	1,684	1,019	1,078	1,227	1,557
Glass:					
Sheet and Plate	3,146	2,060	1,235	9,883	2,972
Beads and False Pearls	8,840	10,311	9,691	1,104	10,885
Bottles, common	443	817	747	1,124	1,009
Other ware	18,838	23,915	20,351	22,206	26,633
	31,267	37,103	32,024	34,317	41,499

No. 10—*concluded.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*concluded.*

ARTICLES.		1887-88.	1888-89.	1889-90.	1890-91.	1891-22.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Hides and Skins:						
Hides, dressed or tanned	No	0	0	40	22	0
	= Cwt.	0	0	3	3	0
Skins, dressed or tanned	No.	42,267	24,785	740	0	965
	= Cwt	527	240	8	0	11
Instruments and Apparatus:						
Musical		—	—	—	—	—
Photographic		—	—	—	—	—
Scientific, Philosophical, &c.		—	—	—	—	—
Ivory, manufactured		—	—	—	—	—
Jewellery, &c.:						
Jewellery		—	—	—	—	—
Plate		—	—	—	—	—
Leather:						
Unwrought	Cwt.	32	10	7	20	29
Manufactures of:						
Saddlery and Harness		—	—	—	—	—
Other sorts		—	—	—	—	—
Matches, lucifer and other		—	—	—	—	—
Mats	Sq. Yds.	15,056	14,895	41,511	17,089	20,414
Paints and Colours	Cwt.	3,134	3,364	3,180	4,632	3,493
Painters' Materials		—	—	—	—	—
Paper and Pasteboard						
Printing Paper	Cwt.	109	270	165	226	325
Writing Paper and Envelopes		—	—	—	—	—
Other sorts of Paper	Cwt.	182	120	161	223	208
Pasteboard, Millboard, &c.	,,	91	66	35	0	3
Perfumery (other than musk)		—	—	—	—	—
Printing and Lithographing materials (other than paper)		—	—	—	—	—
Soap	Cwt.	1,167	443	960	1,719	1,284
Stationery (excluding paper)		—	—	—	—	—
Toys and Requisites for Games		—	—	—	—	—
Umbrellas	No	51,533	60,025	45,190	57,601	61,909
Wood, manufactures of		—	—	—	—	—
Articles (not specified) exported by Post		—	—	—	—	—
All other Articles		—	—	—	—	—

No. 11—*concluded.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*concluded.*

ARTICLES.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Hides and Skins:					
Hides, dressed or tanned	0	0	18	53	0
Skins, dressed or tanned	4,439	2,441	83	0	122
Instruments and Apparatus:					
Musical	4,018	3,726	4,823	3,833	8,866
Photographic	521	684	1,184	759	1,526
Scientific, Philosophical, &c.	2,620	2,586	6,071	4,059	3,489
	7,159	6,996	12,078	8,651	13,881
Ivory, manufactured	71	361	379	753	812
Jewellery, &c.:					
Jewellery	4,587	5,418	9,718	4,821	7,586
Plate	2,975	10,664	77	614	1,374
Leather:					
Unwrought	552	242	258	463	657
Manufactures of:					
Saddlery and Harness	955	1,538	1,812	2,091	1,883
Other sorts	829	820	1,444	1,090	1,812
	2,336	2,600	3,514	3,644	4,352
Matches, lucifer and other	5,062	5,806	5,630	8,426	7,977
Mats	512	718	738	652	724
Paints and Colours	4,378	4,120	4,078	6,746	5,321
Painters' Materials	1,142	1,180	1,896	1,367	1,322
Paper and Pasteboard:					
Printing Paper	306	638	427	592	545
Writing Paper and Envelopes	5,780	2,994	3,255	2,652	5,143
Other sorts of Paper	765	611	627	838	802
Pasteboard, Millboard, &c.	65	77	27	0	2
	6,916	4,320	4,336	4,082	6,492
Perfumery (other than musk)	8,557	8,363	4,907	4,834	6,132
Printing and Lithographing materials (other than paper)	372	1,311	499	1,659	141
Soap	1,792	1,983	1,630	2,548	2,312
Stationery (excluding paper)	6,085	6,591	7,131	8,202	9,927
Toys and Requisites for Games	6,002	4,899	4,659	5,155	5,739
Umbrellas	4,733	6,318	4,704	5,150	6,107
Wood, manufactures of	2,975	1,408	1,604	1,853	2,241
Articles (not specified) exported by Post	5,543	6,259	8,009	8,864	9,126
All other Articles	5,102	4,528	5,679	8,112	11,364
Total Value of Articles Manufactured and partly Manufactured	2,102,042	2,249,230	2,238,573	2,242,139	2,426,066
GRAND TOTAL	4,101,440	4,335,437	4,295,808	4,233,529	4,485,179

No. 12.

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES.

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
I. ANIMALS LIVING:					
HORSES:					
United Kingdom	No.	72	4,456		
Aden	„	2	100	2	100
Ceylon	„	9	217	182	1,853
Straits Settlements	„	6	275	412	6,887
Mauritius	„	67	2,030	138	2,000
Natal	„	2	50		
Australia	„	4,517	153,776	3	400
Italy	„	2	1,000		
Arabia	„	12	435	1	40
Mekran and Sonmiani	„	...	...	3	35
Persia	„	609	18,270		
Sumatra	„	1	18		
Turkey in Asia	„	2,923	97,480		
Egypt	„	...	...	2	325
Zanzibar	„	...	...	37	850
	„	8,222	278,107	780	12,490
OTHER SORTS:					
United Kingdom	No.	144	1,104	27	439
Malta	„	...	...	9	2
Aden	„	...	...	54	8
Ceylon	„	1,321	1,980	83,305	62,143
Straits Settlements	„	2	41	23,464	31,037
Mauritius	„	1,221	8,575	79	755
Australia	„	122	716		
Germany	„	4	180	18	230
Italy	„	12	600		
Arabia	„	114	272		
Mekran and Sonmiani	„	77	254	30	20
Persia	„	139	1,280		
Siam	„	...	...	29	7
Sumatra	„	...	...	2	4
Turkey in Asia	„	37	148		
Zanzibar	„	...	...	295	263
	„	3,193	15,150	107,312	94,908
TOTAL ANIMALS LIVING	No.	11,415	293,257	108,092	107,398
II. ARTICLES OF FOOD AND DRINK:					
COFFEE:					
United Kingdom	Cwt.	88	689	143,736	943,158
Gibraltar	„	...	...	1	9
Aden	„	1,645	7,354	7	46
Ceylon	„	2,229	12,582	66	357
China, Hong Kong	„	...	...	50	359
Straits Settlements	„	22,168	122,808	1	20
Australia	„	...	...	1,253	8,075
Mauritius	„	40	149	4,407	22,045
Austria	„	...	...	27,127	174,380
Belgium	„	—	2	1,343	8,750
France	„	...	...	101,747	645,420
Germany	„	73	331	4,923	33,221
Holland	„	...	...	240	1,440
Italy	„	...	...	9	68
Arabia	„	9	127	9,492	56,872
Mekran and Sonmiani	„	2	10	150	924
Persia	„	...	...	8,931	52,136
Turkey in Asia	„	...	...	10,394	62,433
Abyssinia	„	1	6	471	2,983
Egypt	„	...	...	1,488	8,952
Mozambique	„	...	...	11	68
Réunion	„	1	7		
Zanzibar	„	—	1	350	2,024
United States	„	2	10		
	„	26,258	144,076	316,197	2,023,740

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
FRUITS AND VEGETABLES:					
United Kingdom		—	942	—	13,330
Malta		—	49		
Aden		—	9	—	1,68[illegible]
Ceylon		—	23,637	—	17,912
China, Hong Kong		—	12	—	6,361
Straits Settlements		—	72,295	—	20,108
Mauritius		...	...	—	558
Natal		...	...	—	345
Australia		—	99	—	1
Austria		—	220	—	12
Belgium		...	...	—	4,520
France		—	456	—	11,282
Germany		...	...	—	3,850
Italy		—	679	—	821
Arabia		—	7,855	—	961
China, Treaty Ports		...	...	—	4
Japan		...	...	—	2
Maldive Islands		—	14,913	—	50
Mekran and Sonmiani		—	30	—	475
Persia		—	191	—	2,044
Russia in Asia		—	5		
Siam		—	127	—	22
Turkey in Asia		—	912	—	790
Abyssinia		...	...	—	15
Egypt		—	116	—	216
Mozambique		—	700	—	384
Zanzibar		—	11,008	—	2,361
		—	134,255	—	88,105
GRAIN AND PULSE:					
RICE IN THE HUSK:					
United Kingdom	Cwt.	...	...	392	91
Ceylon	„	1,410	411	423,802	88,496
Straits Settlements	„	21	6	1,766	364
Mauritius	„	...	...	33	9
Natal	„	...	...	3	1
Australia	„	...	...	27	11
Austria	„	...	...	21	5
Italy	„	...	...	2	1
Siam	„	7	2	2	0
Turkey in Asia	„	3,827	1,208		
United States	„	...	...	1,000	200
	„	5,265	1,627	427,048	89,178
RICE NOT IN THE HUSK:					
United Kingdom	Cwt.	60	30	5,135,167	1,932,343
Malta	„	...	...	1,639,753	573,918
Aden	„	10	12	230,023	103,027
Ceylon	„	1,710	723	4,145,411	1,832,103
China, Hong Kong	„	58	28	1,268	795
Straits Settlements	„	48	22	4,179,943	2,027,634
Cape Colony	„	...	...	100,041	59,394
Mauritius	„	28	16	1,549,228	716,062
Natal	„	145	58	170,319	79,293
Canada	„	...	...	73,502	22,576
Australia	„	192	67	47,420	25,369
Austria	„	...	...	6,893	2,972
Belgium	„	...	...	248	125
France	„	...	...	47,198	19,169
Germany	„	...	...	543,954	231,234
Greece	„	...	...	15	8
Holland	„	...	...	7	4
Italy	„	2	2	154	85
Turkey in Europe	„	...	...	44	24
Arabia	„	...	...	662,075	317,066
China, Treaty Ports	„	...	...	208	105
Java	„	...	...	66,919	27,292
Maldive Islands	„	...	...	45,971	19,650
Mekran and Sonmiani	„	...	...	36,269	16,470
Persia	„	125	118	203,376	99,055
Siam	„	1	0	58 379	28,479

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891–92, distinguishing Countries—*continued.*

Articles and Countries.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
II. Articles of Food and Drink—*cont.*					
Grain and Pulse—*cont.*					
Rice not in the Husk—*cont.*					
Turkey in Asia	Cwt.	563	283	6,254	3,120
Abyssinia	„	...	...	4,386	2,111
Egypt	„	...	...	10,874,426	3,788,950
Madagascar	„	...	...	9	4
Mozambique	„	9	5	21,886	12,769
Réunion	„	...	...	258,589	117,056
Zanzibar	„	12	6	215,598	118,049
South America	„	...	...	1,796,372	843,898
United States	„	...	...	63,369	27,580
West Indies	„	...	...	538,973	238,655
Other Countries	„	...	...	22,234	10,348
	„	2,963	1,370	32,739,881	13,296,792
Wheat:					
United Kingdom	Cwt.	...	...	12,348,453	5,958,727
Malta	„	...	...	51,782	27,522
Aden	„	...	...	22,440	11,867
Ceylon	„	7	5	3,209	1,603
China, Hong Kong	„	...	...	1,524	757
Straits Settlements	„	...	...	6,417	2,712
Mauritius	„	871	407	185	86
Natal	„	...	...	10	7
Cape Colony	„	...	...	6,446	2,729
Austria	„	...	...	2	1
Belgium	„	...	...	4,654,949	2,124,537
France	„	...	...	6,024,486	2,911,416
Germany	„	...	...	663,534	331,906
Holland	„	...	...	523,036	236,184
Italy	„	...	...	1,062,125	513,211
Portugal	„	...	...	35,000	17,500
Arabia	„	2,610	1,033	25,519	11,724
Maldive Islands	„	...	...	18	9
Mekran and Sonmiani	„	...	...	10,515	2,729
Persia	„	87,216	38,291	215	85
Siam	„	...	...	4	2
Turkey in Asia	„	255,208	113,038		
Abyssinia	„	...	...	291	153
Egypt	„	...	...	4,858,524	2,222,308
Madagascar	„	...	...	6	3
Mozambique	„	...	...	363	215
Réunion	„	...	...	3,666	1,750
Zanzibar	„	...	...	3,976	2,256
Other Countries	„	...	..	5	3
		345,912	152,774	30,306,700	14,382,002
Other Sorts	„	161,985	59,819	2,915,709	929,307
Total Grain and Pulse:					
United Kingdom	Cwt.	635	456	18,516,263	8,190,554
Malta	„	...	...	1,691,643	601,475
Aden	„	38	24	365,479	153,302
Ceylon	„	3,701	1,341	4,711,453	1,974,979
China, Hong Kong	„	82	40	3,778	1,957
Straits Settlements	„	2,399	1,482	4,253,571	2,055,754
Cape Colony	„	...	...	106,546	62,152
Mauritius	„	928	437	1,992,541	863,241
Natal	„	188	77	186,749	86,843
Canada	„	...	...	73,531	22,597
Australia	„	492	196	50,618	26,947
Austria	„	...	...	6,916	2,978
Belgium	„	...	...	4,819,323	2,172,754
France	„	4	3	6,198,409	2,968,442
Germany	„	...	...	1,210,484	564,451
Greece	„	...	...	15	8
Holland	„	...	...	523,043	236,188
Italy	„	2	2	1,070,838	515,739
Portugal	„	...	...	35,000	17,500
Turkey in Europe	„	..	...	44	24

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891–92, distinguishing Countries—*continued.*

Articles and Countries.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
II. Articles of Food and Drink—*cont.*					
Grain and Pulse—*cont.*					
Total Grain and Pulse—*cont.*					
Arabia	Cwt.	4,550	1,751	752,834	350,236
China, Treaty Ports	,,	...	...	2,576	905
Japan	,,	...	...	2	1
Java	,,	...	...	60,921	27,292
Maldive Islands	,,	...	...	46,062	19,688
Mekran and Sonmiani	,,	10,580	4,492	60,391	23,150
Persia	,,	105,528	44,550	205,058	99,801
Siam	,,	9	3	58,435	28,505
Sumatra	,,	...	...	10	4
Turkey in Asia	,,	380,389	158,524	6,661	3,331
Abyssinia	,,	...	...	574,260	189,586
Egypt	,,	...	...	15,831,381	6,043,083
Madagascar	,,	8	3	22	12
Mozambique	,,	5,247	1,735	23,141	13,484
Réunion	,,	...	...	273,307	122,554
Zanzibar	,,	1,345	474	229,867	124,715
South America	,,	...	...	1,805,544	848,045
United States	,,	...	...	64,370	27,780
West Indies	,,	...	...	554,922	246,450
Other Countries	,,	...	...	23,330	10,772
	,,	516,125	215,590	66,389,338	28,697,279
Liquors:					
Ale, Beer, and Porter:					
United Kingdom	Gals.	2,844,574	413,149	50	12
Aden	,,	...	...	362	69
Ceylon	,,	2,283	224	520	139
China, Hong Kong	,,	2	0	1,008	282
Straits Settlements	,,	1,229	414	1,046	342
Australia	,,	5	0		
Austria	,,	3,699	837		
Belgium	,,	3,842	992		
France	,,	129	22		
Germany	,,	117,437	29,319	40	10
Holland	,,	704	175		
Italy	,,	3	1		
Arabia	,,	...	...	42	13
Mekran and Sonmiani	,,	...	...	106	32
Persia	,,	2	0	30	10
Russia in Asia	,,	8	2		
Siam	,,	...	...	160	44
Turkey in Asia	,,	...	...	136	31
Egypt	,,	6	2		
South America	,,	...	...	32	6
United States	,,	20	5		
	,,	2,973,943	445,142	3,532	990
Spirits:					
Brandy:					
United Kingdom	Gals.	116,273	83,492	645	621
Malta	,,	2	10		
Aden	,,	5	4		
Ceylon	,,	33	18	50	78
China, Hong Kong	,,	2	2	51	37
Straits Settlements	,,	827	487		
Mauritius	,,	6	7		
Natal	,,	2	2		
Australia	,,	3	4	56	75
Austria	,,	213	127		
Belgium	,,	12,028	3,540		
France	,,	105,128	78,024	28	34
Germany	,,	19,623	6,339		
Greece	,,	48	33		
Holland	,,	1,788	321		
Italy	,,	9	12		
Norway	,,	292	57		
Arabia	,,	...	...	215	88
Mekran and Sonmiani	,,	...	...	628	287
Persia	,,	2	2	1,143	616

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
SPIRITS—*cont.*					
BRANDY—*cont.*					
Russia in Asia	Gals.	3	5		
Turkey in Asia	„	...	...	44	36
Egypt	„	224	89	2	2
Réunion	„	...	...	9	12
South America	„	...	...	164	220
United States	„	2	2	1	2
West Indies	„	...	...	148	195
GIN:					
United Kingdom	Gals.	29,769	12,483	80	24
Ceylon	„	9	8		
China, Hong Kong	„	...	...	12	6
Straits Settlements	„	7,921	2,121		
Belgium	„	7,311	1,782		
France	„	10	5		
Germany	„	12,563	4,576		
Holland	„	18,863	7,053		
Arabia	„	...	...	152	48
Mekran and Sonmiani	„	...	...	47	15
Persia	„	...	...	2	3
Russia in Asia	„	1	1		
United States	„	...	...	6	1
RUM:					
United Kingdom	Gals.	7,438	3,398	95,383	11,597
Aden	„	1	1		
China, Hong Kong	„	...	...	3	1
Straits Settlements	„	7,202	1,135		
Mauritius	„	601	84		
Natal	„	9	8		
France	„	21	12		
Germany	„	684	105		
Arabia	„	5	4		
Russia in Asia	„	7	4		
South America	„	...	...	115	25
United States	„	...	...	5	1
WHISKY:					
United Kingdom	Gals.	410,584	281,030	466	277
Malta	„	36	29		
Aden	„	5	3	10	9
Ceylon	„	168	102	40	41
China, Hong Kong	„	3	2	382	301
Straits Settlements	„	521	440		
Natal	„	4	5		
Australia	„	2,049	1,834		
France	„	308	240		
Germany	„	3,237	2,011		
Holland	„	58	48		
Arabia	„	1	2	183	45
Mekran and Sonmiani	„	...	...	322	184
Persia	„	...	...	341	285
Russia in Asia	„	10	10		
Turkey in Asia	„	...	...	2	2
Abyssinia	„	...	...	5	4
South America	„	...	...	8	5
United States	„	635	489	7	5
OTHER SORTS	„	243,700	164,004	11,214	4,620
TOTAL SPIRITS:					
United Kingdom	Gals.	629,292	499,146	107,679	17,056
Gibraltar	„	13	41		
Malta	„	43	45		
Aden	„	136	36	10	9
Ceylon	„	91,936	11,975	90	119
China, Hong Kong	„	28	13	455	351
Straits Settlements	„	35,281	7,299	8	20
Mauritius	„	607	93		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
SPIRITS—*cont.*					
TOTAL SPIRITS—*cont.*					
Natal	Gals.	25	19		
Australia	„	2,058	1,845	56	75
Austria	„	3,666	1,423		
Belgium	„	25,152	10,954		
France	„	107,090	81,540	28	34
Germany	„	89,891	27,180		
Greece	„	48	33		
Holland	„	21,015	7,516		
Italy	„	154	350		
Norway	„	292	56		
Portugal	„	3	2		
Arabia	„	8	9	550	181
Mekran and Sonmiani	„	...	...	997	486
Persia	„	6	3	1,579	958
Russia in Asia	„	34	26		
Saigon	„	2	20		
Siam	„	15	8		
Turkey in Asia	„	10	8	46	38
Abyssinia	„	...	...	5	4
Egypt	„	244	100	2	2
Réunion	„	...	...	9	13
Zanzibar	„	32	39	1	3
South America	„	...	...	287	249
United States	„	3,166	5,827	19	9
West Indies	„	...	...	148	195
	„	1,010,247	655,606	111,969	19,802
WINES AND LIQUEURS:					
CHAMPAGNE:					
United Kingdom	Gals.	38,955	98,461	296	712
Gibraltar	„	32	83		
Malta	„	36	90		
Aden	„	6	12	4	10
Ceylon	„	5	10	14	25
China, Hong Kong	„	...	...	62	132
Straits Settlements	„	12	24		
Austria	„	21	44		
Belgium	„	3,381	8,601		
France	„	4,298	7,686	44	146
Germany	„	41	57		
Holland	„	12	24		
Italy	„	24	27		
Arabia	„	...	...	6	9
Mekran and Sonmiani	„	...	...	1	2
Persia	„	...	...	91	270
Russia in Asia	„	9	14		
Turkey in Asia	„	...	...	10	31
Zanzibar	„	86	174		
CLARET:					
United Kingdom	„	51,572	32,460	291	276
Gibraltar	„	164	122		
Malta	„	295	134		
Aden	„	679	232		
Ceylon	„	526	198	106	73
China, Hong Kong	„	...	...	111	73
Straits Settlements	„	3,019	1,367	26	19
Mauritius	„	55	27		
Natal	„	1	1		
Australia	„	1,048	484		
Austria	„	4,365	1,725		
France	„	41,187	17,580	801	1,504
Germany	„	806	480		
Greece	„	72	26		
Holland	„	584	240		
Italy	„	4,049	1,475		
Portugal	„	101	25		
Spain	„	93	40		
Arabia	„	...	...	1	1
Mekran and Sonmiani	„	...	...	2	1
Persia	„	...	...	20	17
Russia in Asia	„	17	10		
Siam	„	...	...	6	5

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
WINES AND LIQUEURS—*cont.*					
CLARET—*cont.*					
Turkey in Asia	Gals.	37	6	22	22
Egypt	„	109	18		
Madagascar	„	97	28		
Réunion	„	98	22		
South America	„	...	...	145	42
Other Countries	„	48	8		
PORT:					
United Kingdom	„	69,297	52,494	112	123
Gibraltar	„	4,633	4,468		
Malta	„	82	67		
Aden	„	446	103	26	32
Ceylon	„	98	50	8	26
China Hong Kong	„	1	0	6	7
Straits Settlements	„	106	43	4	5
Natal	„	2	2		
Australia	„	6	8		
Austria	„	30	13		
Belgium	„	47	39		
France	„	309	239	80	60
Germany	„	4,454	1,498		
Holland	„	28	16		
Portugal	„	210	210		
Arabia	„	...	...	24	26
Mekran and Sonmiani	„	...	...	6	5
Persia	„	...	...	76	82
Russia in Asia	„	1	0		
Turkey in Asia	„	...	...	20	15
South America	„	...	...	2	3
United States	„	1	2		
SHERRY:					
United Kingdom	„	32,646	25,471	183	157
Gibraltar	„	5,195	4,109		
Malta	„	684	530		
Aden	„	6	5	30	40
Ceylon	„	14	17	58	50
China, Hong Kong	„	...	...	22	24
Straits Settlements	„	363	158	2	1
Belgium	„	...	...	5	5
France	„	605	277		
Germany	„	1,048	237		
Italy	„	530	240		
Portugal	„	42	17		
Arabia	„	...	...	2	2
Mekran and Sonmiani	„	...	...	12	9
Persia	„	135	57	130	124
Russia in Asia	„	1	0		
Turkey in Asia	„	...	...	2	4
South America	„	...	...	2	2
United States	„	2	2		
OTHER SORTS	„	105,976	77,186	3,814	3,029
TOTAL WINES AND LIQUEURS:					
United Kingdom	Gals.	244,155	256,002	1,552	2,757
Gibraltar	„	10,814	9,555		
Malta	„	1,576	1,174		
Aden	„	9,236	2,825	115	103
Ceylon	„	1,460	574	268	230
China, Hong Kong	„	9	8	279	314
Straits Settlements	„	4,620	2,217	35	28
Cape Colony	„	2	2		
Mauritius	„	55	27		
Natal	„	3	3		
Australia	„	2,429	1,302		
Austria	„	10,323	4,881	2,387	713
Belgium	„	4,268	9,537	5	5
France	„	67,463	39,186	1,328	2,291
Germany	„	11,276	4,506	2	2
Greece	„	501	199		
Holland	„	2,414	2,101		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
WINES AND LIQUEURS—*cont.*					
TOTAL WINES AND LIQUEURS—*cont.*					
Italy	Gals.	10,069	4,319		
Portugal	,,	1,002	499		
Spain	,,	93	40		
Sweden	,,	3	4		
Arabia	,,	...	...	121	86
Mekran and Sonmiani	,,	...	...	31	26
Persia	,,	360	197	352	516
Russia in Asia	,,	60	40		
Siam	,,	...	...	6	5
Turkey in Asia	,,	43	8	58	77
Egypt	,,	372	131		
Madagascar	,,	97	28		
Réunion	,,	98	22		
Zanzibar	,,	86	174		
South America	,,	...	...	149	48
United States	,,	3	4		
Other Countries	,,	48	8		
	,,	382,938	339,573	6,688	7,201
OTHER SORTS	,,	2,974	1,774	12	4
TOTAL LIQUORS:					
United Kingdom	Gals.	3,720,921	1,170,002	109,287	19,827
Gibraltar	,,	10,827	9,596		
Malta	,,	1,619	1,219		
Aden	,,	9,372	2,861	487	180
Ceylon	,,	95,679	12,774	884	491
China, Hong Kong	,,	39	22	1,742	947
Straits Settlements	,,	41,130	9,929	1,089	390
Cape Colony	,,	2	2		
Mauritius	,,	662	119		
Natal	,,	28	22		
Australia	,,	4,493	3,152	56	75
Austria	,,	17,688	7,141	2,387	713
Belgium	,,	33,262	21,483	5	5
France	,,	174,684	120,752	1,356	2,325
Germany	,,	218,655	61,052	42	13
Greece	,,	549	231		
Holland	,,	24,133	9,792		
Italy	,,	10,246	4,685		
Norway	,,	292	56		
Portugal	,,	1,005	501		
Spain	,,	93	40		
Sweden	,,	3	4		
Arabia	,,	8	9	713	279
Mekran and Sonmiani	,,	...	...	1,134	545
Persia	,,	368	200	1,961	1,483
Russia in Asia	,,	102	68		
Saigon	,,	2	20		
Siam	,,	15	8	166	49
Turkey in Asia	,,	53	15	240	146
Abyssinia	,,	...	...	5	4
Egypt	,,	622	233	2	2
Madagascar	,,	97	28		
Réunion	,,	98	23	9	13
Zanzibar	,,	118	213	1	3
South America	,,	...	...	468	303
United States	,,	3,189	5,835	19	9
West Indies	,,	...	...	148	195
Other Countries	,,	48	8		
	,,	4,370,102	1,442,095	122,201	27,997
PROVISIONS:					
United Kingdom		—	676,285	—	71,293
Gibraltar		—	8	—	32
Malta		—	2	—	5
Aden		—	8,006	—	97,993
Ceylon		—	8,173	—	161,517
China, Hong Hong		—	15,796	—	72,800
Straits Settlements		—	271,880	—	97,278
Cape Colony		...	110	—	471
Mauritius		—	105	—	113,443

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
PROVISIONS:					
Natal		—	55	—	30,656
Canada		...	...	—	12
Australia		—	3,695	—	18,402
Austria		—	2,260	—	3,930
Belgium		—	2,396	—	36,854
France		—	9,211	—	1,838
Germany		—	7,835	—	16,106
Greece		—	33	—	17
Holland		—	2,517	—	413
Italy		—	6,604	—	5,983
Portugal		—	67		
Spain		—	220		
Sweden		—	125	—	41
Turkey in Europe		—	29	—	118
Arabia		—	192,643	—	54,730
China, Treaty Ports		—	239	—	2,215
Japan		—	82	—	198
Java		—	46	—	894
Maldive Islands		—	768	—	328
Mekran and Sonmiani		—	54,012	—	2,542
Persia		—	221,926	—	5,928
Saigon		—	18		
Siam		—	47	—	1,016
Sumatra		...	...	—	24
Turkey in Asia		—	280,581	—	6,535
Abyssinia		—	26	—	25,083
Egypt		—	362	—	11,031
Madagascar		—	81	—	95
Mozambique		—	2	—	11,618
Réunion		—	58	—	3,630
Zanzibar		—	2,384	—	35,454
South America		—	12	—	615
United States		—	2,796	—	154
West Indies		...	...	—	1,707
Other Countries		—	298	—	1,084
		—	1,771,793	—	894,083
SALT:					
United Kingdom	Tons	222,260	383,207	—	3
Gibraltar	„	...	...	—	2
Aden	„	33,969	45,733		
China, Hong Kong	„	...	...	2	24
Straits Settlements	„	13	74	3	43
Germany	„	103,403	179,609		
Italy	„	440	692		
Arabia	„	9,840	12,851		
Russia in Asia	„	—	2		
Persia	„	1,928	2,925	—	1
Siam	„	—	1		
Turkey in Asia	„	2,100	2,859		
Zanzibar	„	...	...	—	4
South America	„	...	...	3	5
West Indies	„	...	...	2	3
		373,953	627,953	10	85
SPICES:					
United Kingdom	Lbs.	21,106	567	1,814,419	51,527
Gibraltar	„	...	...	2,345	123
Aden	„	33,341	692	1,824,133	40,227
Ceylon	„	11,466,986	193,402	4,586,632	42,490
China, Hong Kong	„	240,486	3,622	533,494	10,615
Straits Settlements	„	40,963,959	493,179	3,260,483	32,982
Cape Colony	„	...	...	601	6
Mauritius	„	...	...	456,877	4,845
Natal	„	483	5	85,247	1,637
Australia	„	...	...	24,870	485
Austria	„	...	...	93,102	2,354
Belgium	„	...	...	22,400	500
France	„	...	...	7,562,938	129,974
Germany	„	...	...	272,273	8,736
Greece	„	...	...	2,146	55
Holland	„	...	...	22,400	500
Italy	„	...	...	170,380	3,831
Turkey in Europe	„	...	...	2,520	76
Arabia	„	50,151	944	1,156,571	28,841
China, Treaty Ports	„	...	...	53,200	600
Japan	„	63,790	815	38,654	823
Maldive Islands	„	...	...	15,904	158

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
SPICES—*cont.*					
Mekran and Sonmiani	Lbs.	...	...	43,167	680
Persia	„	812	17	1,038,097	26,207
Siam	„	...	...	6,526	139
Sumatra	„	672	7		
Turkey in Asia	„	168	4	1,105,845	6,524
Abyssinia	„	...	...	238,716	2,738
Egypt	„	...	...	556,600	14,433
Madagascar	„	2,912	130	112	2
Mozambique	„	...	...	92,465	1,362
Réunion	„	...	...	13,906	267
Zanzibar	„	5,698,692	103,812	251,475	5,320
		58,543,558	797,196	25,348,498	439,157
SUGAR (REFINED, UNREFINED, and SUGAR CANDY):					
United Kingdom	Cwt.	30,233	38,106	780,062	377,856
Aden	„	...	...	39,125	44,439
Ceylon	„	1,082	626	41,525	39,205
China, Hong Kong	„	177,416	216,749	2	5
Straits Settlements	„	123,761	159,246	283	299
Mauritius	„	1,471,916	1,684,607	33	55
Natal	„	4	8	43	69
Australia	„	2	1	2	3
Canada	„	...	...	53,357	25,342
Austria	„	22,505	27,197		
Belgium	„	1	3		
France	„	15,409	21,125		
Germany	„	242,705	292,032	1	2
Italy	„	51	71		
Arabia	„	48	30	42,369	44,470
Java	„	127,771	121,980		
Maldive Islands	„	...	...	601	821
Mekran and Sonmiani	„	23	13	1,896	2,239
Persia	„	45	31	74,470	90,231
Siam	„	...	...	36	23
Turkey in Asia	„	1	1	24,509	30,189
Abyssinia	„	...	...	715	884
Egypt	„	2	4	64,418	27,879
Madagascar	„	...	...	17	21
Mozambique	„	...	...	5,135	6,230
Zanzibar	„	148	163	8,582	10,777
United States	„	2	3		
Other Countries	„	...	...	5	7
		2,213,125	2,561,996	1,137,186	701,046
TEA:					
United Kingdom	Lbs.	13,096	1,304	111,169,148	5,524,741
Gibraltar	„	...	...	4,880	510
Malta	„	...	...	2,154	125
Aden	„	80	4	22,096	1,055
Ceylon	„	849,737	40,764	36,656	1,670
China, Hong Kong	„	813,623	44,526	50,257	2,304
Straits Settlements	„	589,953	27,032	62,403	2,781
Cape Colony	„	...	...	19,177	1,158*
Mauritius	„	...	...	6,707	327
Natal	„	...	...	8,996	416
St. Helena	„	...	...	600	60*
Australia	„	...	...	5,203,995	188,834*
Canada	„	...	...	101,672	4,667*
Austria	„	...	...	3,959	394
France	„	15	1	16,863	924
Germany	„	...	...	138,840	7,342
Greece	„	...	...	540	58
Holland	„	...	...	29,847	1,249
Italy	„	...	...	1,737	173
Portugal	„	...	...	40	2*
Turkey in Europe	„	...	...	3,767	124*
Arabia	„	700	115	133,189	9,431
China, Treaty Ports	„	3,866,609	307,367	742	41*
Java	„	216,261	21,829		
Japan	„	2,050	150	208	21*
Maldive Islands	„	...	...	140	6
Mekran and Sonmiani	„	...	...	364	27

* The exports marked with an asterisk are entirely of Indian tea. Of the value of exports to the United Kingdom, Rx. 5,524,713 represents Indian tea.

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891–92, distinguishing Countries—*continued.*

Articles and Countries.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
II. Articles of Food and Drink—*cont.*					
Tea—*cont.*					
Persia	Lbs.	730	61	5,904,866	488,221
Siam	„	10	0	677	46*
Turkey in Asia	„	...	...	431,769	37,137
Abyssinia	„	...	...	1,338	78
Egypt	„	...	...	19,847	1,150
Mozambique	„	...	...	23,760	2,082
Zanzibar	„	...	...	23,325	1,307
South America	„	...	...	10,015	451*
United States	„	153	8	83,405	4,949*
West Indies	„	...	...	30	3*
Other Countries	„	...	...	60	6*
		6,353,017	443,161	123,518,069	6,283,870
Other Sorts		—	38,682	—	4,701
Total Articles of Food and Drink		—	8,176,797	—	39,160,063
III. Metals and Manufactures of:					
Metals:					
Brass:					
United Kingdom	Cwt.	8,724	45,402	868	12,991
Gibraltar	„	...	...	37	485
Malta	„	1	9	36	474
Aden	„	105	311	51	304
Ceylon	„	150	622	449	2,616
China, Hong Kong	„	96	1,249	2	25
Straits Settlements	„	153	1,989	191	1,149
Mauritius	„	13	33	253	1,404
Natal	„	...	...	134	1,135
Australia	„	...	...	15	155
Austria	„	702	8,503	19	245
Belgium	„	569	2,959		
France	„	4	33	30	447
Germany	„	267	2,516	11	133
Greece	„	...	...	1	12
Holland	„	4	26		
Italy	„	1	12	7	48
Arabia	„	65	195	273	2,875
China, Treaty Ports	„	2	17		
Japan	„	1	20		
Maldive Islands	„	...	...	2	7
Mekran and Sonmaini	„	...	...	1	4
Persia	„	11	102	173	1,146
Siam	„	...	...	1	10
Sumatra	„	...	...	15	71
Turkey in Asia	„	1	32	37	200
Abyssinia	„	...	...	7	34
Egypt	„	...	...	38	490
Madagascar	„	44	128		
Mozambique	„	3	8	27	144
Zanzibar	„	58	171	375	1,973
South America	„	36	80	18	113
United States	„	...	...	3	56
West Indies	„	...	...	77	439
Other Countries	„	1	4	—	1
Copper:					
United Kingdom	„	387,566	1,561,148	11,075	41,283
Gibraltar	„	...	...	—	2
Malta	„	...	...	—	10
Aden	„	231	882	666	3,604
Ceylon	„	2,864	12,658	280	1,704
China, Hong Kong	„	83,357	306,217	7	34
Straits Settlements	„	2,171	9,765	228	1,209
Cape Colony	„	107	321		
Mauritius	„	129	409	39	243
Natal	„	...	...	10	58
Australia	„	20,415	87,265	—	3
Austria	„	1,547	32,047	11	206
Belgium	„	8,880	37,524		
France	„	979	17,809	1	33
Germany	„	330	3,893	—	1
Italy	„	324	7,331		
Arabia	„	288	1,142	1,378	6,620
China, Treaty Ports	„	—	1		

* The exports marked with an asterisk are entirely of Indian tea. Of the value of exports to the United Kingdom, Rx. 5,524,713 represents Indian tea.

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
III. METALS, AND MANUFACTURES OF—*cont.*					
COPPER—*cont.*					
Japan	Cwt.	615	2,371	—	1
Maldive Islands	„	7	15	22	124
Mekran and Sonmiani	„	3	18	37	175
Persia	„	5	41	12,947	55,869
Siam	„	1	4	2	13
Turkey in Asia	„	...	...	1,090	4,767
Abyssinia	„	1	5		
Egypt	„	19	60	10	94
Madagascar	„	62	235	2	10
Mozambique	„	5	16	85	449
Réunion	„	160	405		
Zanzibar	„	700	6,669	333	1,838
South America	„	146	320		
United States	„	160	400		
Other Countries	„	16	53	184	2,810
IRON :					
United Kingdom	„	2,859,753	1,905,051	21,823	5,308
Aden	„	4	1	10,231	7,800
Ceylon	„	6,725	1,399	3,726	2,526
China, Hong Kong	„	...	...	33,699	5,502
Straits Settlements	„	477	549	1,436	777
Mauritius	„	26	15	4,055	4,815
Natal	„	12	3	25	25
Australia	„	1,400	350	10	10
Austria	„	126	103		
Belgium	„	776,328	388,155		
France	„	47	35	1,998	407
Germany	„	28,559	21,010	2,170	434
Holland	„	538	490		
Italy	„	241	19	69,340	13,138
Norway	„	1,310	1,167		
Sweden	„	3,524	2,286		
Arabia	„	233	59	8,757	6,604
Maldive Islands	„	...	...	69	52
Mekran and Sonmiani	„	22	8	589	457
Persia	„	27	24	33,267	24,635
Siam	„	...	...	1,509	382
Turkey in Asia	„	7	4	9,489	6,575
Abyssinia	„	...	...	29	27
Egypt	„	530	435	25	26
Madagascar	„	...	...	1	1
Mozambique	„	...	...	2,474	2,154
Zanzibar	„	...	...	6,150	4,984
United States	„	...	...	24,025	5,039
Other Countries	„	600	120	1	2
LEAD :					
United Kingdom	„	107,271	154,609	15,560	11,782
Aden	„	...	...	16	21
Ceylon	„	455	538	12	19
Straits Settlements	„	...	...	5,980	4,989
Mauritius	„	...	...	4	5
Australia	„	—	1		
Austria	„	4	14		
Belgium	„	684	807		
France	„	8,934	9,639		
Germany	„	7	29		
Italy	„	5,070	5,125		
Arabia	„	101	108	1,369	1,362
Mekran and Sonmiani	„	...	...	37	37
Persia	„	...	...	1,165	1,332
Turkey in Asia	„	...	...	2,031	2,049
Abyssinia	„	34	27		
Mozambique	„	...	...	277	282
Zanzibar	„	8	11	57	75
QUICKSILVER :					
United Kingdom	Lbs.	253,257	39,699		
Ceylon	„	...	...	975	151
China, Hong Kong	„	7,500	1,125		
Straits Settlements	„	7	2		
Austria	„	14,250	1,994		
Germany	„	5,675	825		
Arabia	„	...	...	225	34
Persia	„	...	...	2,571	403
Turkey in Asia	„	...	...	864	136
Zanzibar	„	...	...	75	12

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
III. METALS, AND MANUFACTURES OF—*cont.*					
STEEL:					
United Kingdom	Cwt.	347,816	239,669	486	317
Aden	„	...	...	1,365	1,188
Ceylon	„	99	69	98	71
China, Hong Kong	„	...	...	1	1
Straits Settlements	„	108	110	3	5
Belgium	„	301,573	155,587		
Germany	„	123,086	63,746	51	40
Holland	„	146	168		
Sweden	„	200	157		
Arabia	„	...	...	913	708
Mekran and Sonmiani	„	...	...	42	37
Persia	„	...	...	894	818
Turkey in Asia	„	...	...	599	478
Mozambique	„	...	...	2	1
Zanzibar	„	...	...	207	193
United States	„	8	19		
TIN:					
United Kingdom	„	1,426	6,851		
Aden	„	...	...	17	124
Ceylon	„	—	1	19	133
China, Hong Kong	„	34	324		
Straits Settlements	„	37,368	257,140	1,441	7,658
Mauritius	„	1	8	121	781
Arabia	„	...	...	263	1,732
Maldive Islands	„	...	...	1	7
Mekran and Sonmiani	„	...	...	5	47
Persia	„	...	...	1,048	7,144
Siam	„	...	...	2	10
Turkey in Asia	„	1	7	774	4,996
Egypt	„	...	...	4	29
Mozambique	„	...	...	15	104
Zanzibar	„	...	...	36	240
ZINC OR SPELTER:					
United Kingdom	„	109,757	174,678		
Aden	„	21	30	48	99
Ceylon	„	313	376	8	12
China, Hong Kong	„	...	...	52	62
Straits Settlements	„	662	1,005		
Austria	„	15	37		
Belgium	„	6,226	12,982		
Germany	„	1,797	3,440		
Arabia	„	...	...	18	29
Maldive Islands	„	...	...	6	5
Mekran and Sonmiani	„	...	...	1	2
Persia	„	...	...	104	170
Turkey in Asia	„	...	...	18	29
Mozambique	„	...	...	51	83
Zanzibar	„	60	66	22	37
OTHER METALS	„	5,713	49,322	411	3,247
TOTAL METALS:					
United Kingdom	„	3,828,961	4,152,923	49,891	71,951
Gibraltar	„	...	...	43	584
Malta	„	1	9	38	533
Aden	„	367	1,587	12,395	13,187
Ceylon	„	10,633	15,723	4,837	8,808
China, Hong Kong	„	83,554	308,915	33,761	5,623
Straits Settlements	„	41,221	274,074	9,205	16,156
Cape Colony	„	107	321		
Mauritius	„	169	465	4,487	7,506
Natal	„	12	3	171	1,263
Australia	„	21,815	87,616	25	168
Austria	„	2,983	54,707	30	453
Belgium	„	1,094,665	602,068		
France	„	10,050	29,970	2,029	908
Germany	„	154,121	96,072	2,232	608
Greece	„	...	...	1	12
Holland	„	688	683		
Italy	„	5,670	12,925	69,347	13,186
Norway	„	1,310	1,167		

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891-92, distinguishing Countries—*continued.*

Articles and Countries.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
III. Metals, and Manufactures of—*cont.*				
Total Metals—*cont.*				
Sweden - - - Cwt.	3,724	2,443		
Arabia - - - „	687	1,504	12,974	19,976
China, Treaty Ports - „	2	18		
Japan - - - „	616	2,391	—	1
Maldive Islands - - „	7	15	100	195
Mekran and Sonmiani - „	25	25	727	855
Persia - - - „	43	168	49,622	91,548
Siam - - - „	1	4	1,523	463
Sumatra - - - „	...	...	15	72
Turkey in Asia - - „	9	44	14,046	19,152
Abyssinia - - - „	35	33	36	62
Egypt - - - - „	549	496	88	814
Madagascar - - - „	106	363	3	11
Mozambique - - - „	8	23	2,932	3,290
Réunion - - - „	160	405		
Zanzibar - - - „	826	6,917	7,186	9,407
South America - - „	182	400	18	113
United States - - „	168	419	24,028	5,095
West Indies - - „	...	...	77	439
Other Countries - - „	617	177	185	2,813
	5,264,092	5,655,073	302,152	295,252
Hardware and Cutlery (including plated ware):				
United Kingdom - - - -	—	1,028,813	—	27,062
Gibraltar - - - - -	—	1		
Malta - - - - -	...	...	—	133
Aden - - - - -	—	812	—	2,981
Ceylon - - - - -	—	4,432	—	2,684
China, Hong Kong - - - -	—	1,121	—	748
Straits Settlements - - - -	—	10,254	—	8,669
Mauritius - - - - -	—	21	—	1,428
Natal - - - - -	...	90	—	925
Australia - - - - -	—	830	—	154
Austria - - - - -	—	45,099	—	642
Belgium - - - - -	—	49,692	—	96
France - - - - -	—	9,095	—	218
Germany - - - -	—	76,523	—	602
Holland - - - -	—	1,302		
Italy - - - - -	—	1,637	—	45
Russia in Europe - - -	—	14		
Sweden - - - -	—	482	—	7
Turkey in Europe - - - -	—	70		
Arabia - - - -	—	177	—	2,433
China, Treaty Ports - - -	—	17	—	97
Japan - - - -	—	2,411		
Java - - - -	...	...	—	20
Maldive Islands - - - -	...	...	—	186
Mekran and Sonmiani - - -	—	16	—	215
Persia - - - - -	—	87	—	8,244
Siam - - - -	...	82	—	566
Sumatra - - - -	...	30		
Turkey in Asia - - -	—	112	—	7,931
Abyssinia - - - -	...	52	—	217
Egypt - - - - -	—	24	—	173
Mozambique - - - -	—	15	—	7,647
Zanzibar - - - -	—	76	—	6,414
United States - - -	—	5,607	—	41
	—	1,238,994	—	80,578
Machinery and Millwork:				
United Kingdom - - -	—	2,085,084	—	8,008
Aden - - - - -	...	...	—	90
Ceylon - - - - -	—	2,752	—	300
China, Hong Kong - - -	...	...	—	75
Straits Settlements - - -	—	347	—	301
Mauritius - - - - -	...	...	—	13
Australia - - - - -	—	...	—	28
Austria - - - - -	—	4,251	—	30
Belgium - - - - -	—	8,673	—	20
France - - - - -	—	191		
Germany - - - -	—	9,387		
Italy - - - - -	—	75		
Arabia - - - -	—	12		

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891–92, distinguishing Countries—*continued.*

ARTICLES AND COUNTRIES.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
III. Metals, and Manufactures of——*cont.* Machinery and Millwork—*cont.*					
Java		...	...	—	38
Persia		...	...	—	27
United States		—	825		
		—	2,111,597	—	8,930
Railway Plant and Rolling Stock (other than Government Stores):					
United Kingdom		—	1,472,032		
Ceylon		—	1		
Belgium		—	10,858		
France		—	221		
Germany		—	967		
Persia		—	94		
		—	1,484,173		
Total Metals and Manufactures of		—	10,489,837	—	384,760
IV. Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials:					
Chemicals:					
United Kingdom		—	261,239	—	642
Aden		—	797	—	1,566
Ceylon		—	370	—	1,664
China, Hong Kong		—	718	—	171
Straits Settlements		—	1,307	—	1,547
Mauritius		...	...	—	3,205
Natal		...	...	—	6
Australia		—	224	—	2
Austria		—	245		
Belgium		—	1,859		
France		—	3,506	—	105
Germany		—	7,354	—	15
Italy		—	3,783		
Turkey in Europe		...	...	—	608
Arabia		—	4,297	—	2,129
Japan		—	20		
Mekran and Sonmiani		—	1	—	123
Persia		—	6	—	3,035
Siam		...	...	—	8
Turkey in Asia		...	...	—	2,135
Abyssinia		...	...	—	157
Mozambique		...	...	—	12
Zanzibar		...	...	—	421
United States		—	682		
		—	286,408	—	17,601
Drugs, Medicines, and Narcotics:					
Cinchona Bark:					
United Kingdom	Lbs.	...	...	2,693,859	97,986
	,,	...	...	2,693,859	97,986
Quinine:					
United Kingdom	Lbs.	27,959	33,712	6	10
Ceylon	,,	—	—		
Austria	,,	47	45		
Belgium	,,	—	—		
France	,,	618	1,032		
Germany	,,	1,750	2,018		
Italy	,,	62	113		
Arabia	,,	...	...	6	10
Persia	,,	...	...	619	1,236
Turkey in Asia	,,	...	...	4	8
	,,	30,436	36,920	635	1,264

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont.*					
OPIUM:					
United Kingdom	Lbs.	333	471		
	Cwt.	...	...	90	6,604
Ceylon	„	...	...	165	11,725
China, Hong Kong	„	...	...	71,359	5,468,853
Straits Settlements	„	...	...	22,072	1,577,327
Mauritius	„	...	...	76	5,487
Natal	„	...	...	7	618
Australia	„	...	...	4	321
Austria	Lbs.	1	1		
Germany	„	6	14		
Italy	Cwt.	...	...	1	107
China, Treaty Ports	„	...	...	25,757	2,335,002
Java	„	...	...	183	12,952
Philippines	„	...	...	690	50,092
Saigon	„	...	...	1,291	92,625
Mozambique	„	...	...	1	58
Zanzibar	„	...	...	5	490
	Lbs.	340	486		
	Cwt.	...	...	121,701	9,562,261
TOBACCO:					
UNMANUFACTURED:					
United Kingdom	Lbs.	11,023	746	3,257	985
Malta	„	1,000	100		
Aden	„	...	...	6,069,396	71,532
China, Hong Kong	„	...	...	30	6
Ceylon	„	367,892	4,291	134,208	1,911
Straits Settlements	„	9,465	1,144	728,878	8,512
Mauritius	„	...	...	313,350	5,684
Natal	„	...	...	14,330	384
Belgium	„	1,716	368	120,000	450
Germany	„	605	6		
Holland	„	41,792	10,421		
Turkey in Europe	„	5,404	224		
Arabia	„	...	...	11,468	202
Java	„	300	125		
Maldive Islands	„	...	...	12,568	234
Mekran and Sonmiani	„	15,616	182	32,881	323
Persia	„	12,311	255	156	2
Siam	„	...	...	1,634	21
Turkey in Asia	„	4,752	179	1,292	16
Abyssinia	„	...	...	79,452	950
Egypt	„	1,970	285	3,100	92
Réunion	„	...	...	550	14
United States	„	5,555	225		
	„	479,401	18,551	7,526,550	91,312
MANUFACTURED:					
United Kingdom	Lbs.	774,210	86,677	132,587	14,999
Gibraltar	„	...	...	14,105	1,206
Malta	„	5,916	2,524	17,937	1,270
Aden	„	4,773	313	49,586	2,336
Ceylon	„	3,806	1,137	76,651	4,505
China, Hong Kong	„	13,213	2,484	4,507	173
Straits Settlements	„	186,563	10,586	281,676	18,037
Cape Colony	„	...	...	540	36
Mauritius	„	...	...	12,259	1,096
Natal	„	1,456	202	30,112	552
Canada	„	...	...	35	7
Australia	„	195	20	10,682	1,447
Austria	„	4,455	1,474	1,632	156
Belgium	„	5,530	1,867	1,477	114
France	„	728	186	20	8
Germany	„	4,612	1,452	5,563	380
Holland	„	3,981	670		
Italy	„	1	0	16	5
Turkey in Europe	„	805	180		
Arabia	„	...	...	5,141	147
China, Treaty Ports	„	105	82	619	10
Japan	„	50	10	40	7
Java	„	...	...	175	7
Maldive Islands	„	...	...	110,984	874
Mekran and Sonmiani	„	...	...	653	45
Persia	„	...	...	9,947	978
Philippine Islands	„	6,993	1,484		
Siam	„	...	...	5,859	505
Sumatra	„	...	...	60	2

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS. AND DYEING AND TANNING MATERIALS—*cont.*					
TOBACCO—*cont.*					
MANUFACTURED—*cont.*					
Turkey in Asia	Lbs.	614	31	260	23
Egypt	„	28,189	16,665	3,327	478
Madagascar	„	...	...	338	46
Mozambique	„	...	...	306	21
Réunion	„	46	2	7,550	256
Zanzibar	„	337	113	3,009	290
South America	„	...	...	2,464	30
United States	„	298,541	20,360	9	25
West Indies	„	...	...	3,495	18
Other Countries	„	...	...	16	2
	„	1,345,119	148,519	793,637	50,091
OTHER DRUGS, &C.		—	445,949	—	122,245
DYEING AND TANNING MATERIALS:					
ANILINE AND ALIZARINE DYES:					
United Kingdom	Oz.	12,692,192	74,576	12,688	78
Aden	„	...	...	5,504	21
Ceylon	„	...	...	20,864	75
Strait Settlements	„	37,600	340	5,376	22
Mauritius	„	...	...	3,856	22
Austria	„	2,212,928	26,728	7,168	25
Belgium	„	64,029,392	271,815	277,872	1,141
France	„	348,720	3,558		
Germany	„	6,878,826	50,886	34,048	98
Holland	„	1,161,064	6,946		
Italy	„	2,113,760	23,342	1,792	3
Arabia	„	...	...	43,840	393
Persia	„	...	...	14,848	157
Turkey in Asia	„	...	...	367,696	3,576
Egypt	„	...	...	1,600	10
Mozambique	„	...	...	10,304	98
Zanzibar	„	...	...	1,280	7
	„	89,474,482	458,191	808,736	5,726
CUTCH AND GAMBIER:					
United Kingdom	Cwt.	2	3	86,882	144,248
Aden	„	...	...	25	86
Ceylon	„	2	8	1,310	2,788
China, Hong Kong	„	...	...	5	8
Straits Settlements	„	18,011	36,842	9,410	14,025
Mauritius	„	...	...	24	61
Natal	„	...	...	10	28
Australia	„	...	...	1	2
Belgium	„	...	...	1,815	3,414
France	„	...	...	4,090	7,199
Germany	„	...	...	15,879	24,893
Holland	„	...	...	2,126	3,917
Italy	„	...	...	3,507	7,443
Spain	„	...	...	1,300	2,340
Arabia	„	...	...	65	139
Maldive Islands	„	...	...	18	44
Mekran and Sonmiani	„	...	...	1	1
Persia	„	...	...	6	18
Sumatra	„	1	2		
Turkey in Asia	„	...	...	30	68
Egypt	„	...	...	8,959	13,617
Zanzibar	„	...	...	188	357
United States	„	...	...	61,796	93,332
	„	18,016	36,855	197,447	318,028
INDIGO:					
United Kingdom	Cwt.	137	3,032	38,277	995,823
Malta	„	...	...	137	3,173
Ceylon	„	73	1,722	573	12,537
China, Hong Kong	„	11	97	10	180
Straits Settlements	„	1,073	1,265	1	4
Australia	„	...	...	36	423
Austria	„	...	...	10,303	303,614
Belgium	„	...	...	484	13,388
France	„	—	1	14,689	406,055

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92. distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont.*					
INDIGO—*cont.*					
Germany	Cwt.	...	...	11,775	314,292
Greece	„	...	...	159	5,121
Holland	„	...	...	157	4,645
Italy	„	—	1	1,814	46,792
Russia	„	...	...	1,894	56,923
Turkey in Europe	„	...	...	47	1,205
Arabia	„	...	...	206	2,663
Japan	„	...	...	462	9,133
Mekran and Sonmiani	„	...	...	9	66
Persia	„	...	...	5,333	96,140
Turkey in Asia	„	...	...	5,189	132,451
Egypt	„	...	...	13,496	319,939
United States	„	...	...	20,278	489,519
	„	1,294	6,118	125,329	3,214,086
LAC-DYE:					
United Kingdom	Cwt.	...	...	45	250
MYRABOLAMS:					
United Kingdom	Cwt.	7	5	667,996	332,055
Aden	„	...	...	3	1
Ceylon	„	9,014	2,933	1	1
Straits Settlements	„	8	12	185	72
Natal	„	...	...	200	99
Australia	„	...	...	10,287	6,030
Austria	„	...	...	44,753	22,464
Belgium	„	...	...	4,700	2,491
France	„	...	...	4,306	1,944
Germany	„	...	...	45,698	22,019
Italy	„	...	...	6,056	2,948
Russia	„	...	...	6,851	3,586
Arabia	„	...	...	6	2
Japan	„	...	...	1	1
Persia	„	...	...	37	20
Turkey in Asia	„	...	...	50	30
Mozambique	„	...	...	1	0
	„	9,029	2,950	791,131	393,763
TURMERIC:					
United Kingdom	Cwt.	1	2	4,001	3,031
Aden	„	...	...	5,238	6,385
Ceylon	„	1	2	4,395	4,307
China, Hong Kong	„	1,574	1,672	9	12
Straits Settlements	„	2	2	1,697	1,678
Cape Colony	„	...	...	56	66
Mauritius	„	...	...	2,118	2,128
Natal	„	...	...	1,242	1,156
Australia	„	...	...	186	191
Austria	„	...	...	298	259
France	„	...	...	1,463	1,188
Italy	„	...	...	164	156
Turkey in Europe	„	...	...	28	36
Arabia	„	...	...	3,324	3,787
Maldive Islands	„	...	...	21	19
Mekran and Sonmiani	„	...	...	282	363
Persia	„	...	...	7,104	8,582
Turkey in Asia	„	...	...	3,668	4,230
Abyssinia	„	...	...	44	44
Egypt	„	...	...	246	317
Madagascar	„	...	...	1	2
Mozambique	„	...	...	153	197
Réunion	„	...	...	22	20
Zanzibar	„	...	...	1,307	1,489
South America	„	...	...	95	101
United States	„	...	...	5,016	5,496
West Indies	„	...	...	213	236
	„	1,578	1,678	42,391	45,476
OTHER SORTS	„	17,216	92,591	36,476	20,223
TOTAL CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS		—	1,535,216	—	13,940,312

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
V. OILS:					
MINERAL:					
United Kingdom	Gals.	2,431,881	149,858	1,627	195
Aden	,,	35	3	20	2
Ceylon	,,	2,219	161	66,346	3,338
China, Hong Kong	,,	1,000	52	4,280	646
Straits Settlements	,,	8,593	514	36,512	1,887
Mauritius	,,	...	...	880	125
Natal	,,	140	7		
Canada	,,	26,683	3,335		
Austria	,,	4	19		
Belgium	,,	8,617	756		
Germany	,,	2,491	302		
Arabia	,,	...	...	27,576	1,302
Maldive Islands	,,	...	...	22,406	917
Mekran and Sonmiani	,,	...	...	10,263	438
Persia	,,	...	...	217,417	9,556
Russia in Asia	,,	28,333,685	1,128,986		
Siam	,,	...	...	7,265	416
Turkey in Asia	,,	...	...	315,643	13,406
Mozambique	,,	...	...	15,386	642
Zanzibar	,,	...	...	29,510	1,304
United States	,,	27,293,985	1,084,148		
	,,	58,109,283	2,368,141	755,131	34,174
OTHER OILS:					
United Kingdom	Gals.	404,116	64,651	1,911,714	201,969
	Cwt.	...	...	12,631	
Aden	Gals.	...	...	31,471	4,030
Ceylon	,,	1,297,973	169,200	81,823	17,689
	Cwt.	...		36,069	
China, Kong Kong	Gals.	54,620	7,796	144,590	18,880
Straits Settlements	,,	38,863	7,688	300,382	36,598
	Cwt.	...		6,423	
Cape Colony	Gals.	...	...	79,342	8,311
Mauritius	,,	133,210	15,994	226,368	26,579
Natal	,,	28	4	149,282	17,563
Australia	,,	50	41	1,071,350	117,601
Austria	,,	...	...	109,110	12,545
Belgium	,,	1,064	496	48,523	5,686
France	,,	429	243	98,199	13,076
Germany	,,	76	53	236,575	30,992
Turkey in Europe	,,	...	...	276	592
Arabia	,,	1,737	102	37,107	6,461
China, Treaty Ports	,,	...	...	55	7
Japan	,,	...	...	1,300	131
Java	Gals.	...	...	320	458
	Cwt.	...	...	1,574	
Maldive Islands	Gals.	...	...	128	59
Mekran and Sonmiani	,,	94	5	4,983	618
Persia	,,	...	...	4,029	496
Siam	,,	128	21	2,230	343
Turkey in Asia	,,	...	...	1,785	409
Abyssinia	,,	...	...	10,022	1,659
Egypt	,,	111	300	17,985	11,826
Madagascar	,,	...	...	90	15
Mozambique	,,	45	6	12,439	1,740
Réunion	,,	...	...	4,832	504
Zanzibar	,,	...	...	12,151	2,329
South America	,,	...	...	2,609	303
United States	,,	14,095	1,214	421,902	44,525
West Indies	,,	...	...	6,902	827
	Gals.	1,946,639	267,814	5,029,874	584,821
	Cwt.	...		56,697	
TOTAL OILS	Gals.	60,055,922	2,635,955	5,785,005	618,995
	Cwt.	...		56,697	
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
COAL (including coke and patent fuel):					
United Kingdom	Tons	716,665	1,217,311	510	534
Aden	,,	250	430		
Ceylon	,,	483	1,093	1,151	1,290
Straits Settlements	,,	58	71	2,100	2,100

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
COAL (including coke and patent fuel)—*cont.*					
Cape Colony	Tons.	233	308		
Mauritius	„	76	119	500	800
Natal	„	360	881		
Australia	„	12,585	17,901	1	1
Belgium	„	76	303		
France	„	...	...	500	500
Germany	„	927	2,316	5	5
Norway	„	150	199		
Arabia	„	...	...	250	225
Japan	„	4,720	8,952		
Siam	„	...	...	324	737
Sumatra	„	20	30		
Egypt	„	247	400		
Zanzibar	„	71	105	5	20
South America	„	40	58		
United States	„	10	16		
	„	736,971	1,250,493	5,346	6,212
COIR :					
United Kingdom	Cwt.	...	...	15,356	11,720
Aden	„	...	...	80	45
Ceylon	„	656	709	116	86
Straits Settlements	„	...	...	18	19
Cape Colony	„	...	...	2,517	1,842
Mauritius	„	...	...	1,036	596
Natal	„	...	...	816	545
Australia	„	...	...	127	97
Austria	„	...	...	56	45
Belgium	„	...	...	268	188
France	„	...	...	344	276
Germany	„	...	...	293	196
Arabia	„	...	...	3,068	1,805
Persia	„	...	...	292	160
Turkey in Asia	„	...	...	4,299	2,424
Mozambique	„	...	...	8	4
Zanzibar	„	...	...	17	13
United States	„	...	...	496	417
	„	656	709	29,204	20,478
COTTON, RAW :					
United Kingdom	Cwt.	10,651	29,894	714,780	1,634,845
Aden	„	117	267		
Ceylon	„	766	881	7,037	17,748
China, Hong Kong	„	...	...	110,166	266,051
Straits Settlements	„	...	...	7,135	15,496
Mauritius	„	...	...	469	613
Australia	„	...	...	2,017	5,048
Austria	„	...	...	548,004	1,372,567
Belgium	„	...	...	670,003	1,627,295
France	„	3	9	508,697	1,290,369
Germany	„	...	...	744,681	1,801,752
Greece	„	...	...	3,290	9,442
Holland	„	...	...	1,503	4,239
Italy	„	2	6	587,684	1,417,677
Russia	„	...	...	52,581	127,268
Spain	„	...	...	60,683	153,233
Sweden	„	...	...	7,525	19,255
Arabia	„	3,226	5,384	454	552
Japan	„	...	...	400,952	997,082
Maldive Islands	„	...	...	6	12
Mekran and Sonmiani	„	12,132	9,684	30	15
Persia	„	47,882	105,727	11	13
Siam	„	...	...	3	5
Turkey in Asia	„	...	...	6	16
Abyssinia	„	...	...	172	345
Egypt	„	6,479	25,421	812	1,901
Mozambique	„	...	...	49	114
Zanzibar	„	...	...	925	599
United States	„	...	...	4	7
	„	81,258	177,273	4,429,679	10,763,559

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
FLAX, RAW:					
United Kingdom	Lbs.	500	29		
Mozambique	„	...	...	728	25
	„	500	29	728	25
GUMS AND RESINS:					
United Kingdom	Cwt.	43,241	18,807	50,396	118,847
Gibraltar	„	...	...	13	43
Aden	„	7,464	9,584	117	298
Ceylon	„	1	2	275	446
China, Hong Kong	„	—	2	8,017	10,062
Straits Settlements	„	12,683	41,847	164	348
Mauritius	„	7	3	40	150
Natal	„	...	...	50	226
Australia	„	...	...	129	658
Austria	„	—	1	1,316	3,010
Belgium	„	...	...	9,305	14,898
France	„	...	...	655	816
Germany	„	1,946	883	2,633	4,824
Greece	„	...	...	307	204
Italy	„	...	...	20	60
Turkey in Europe	„	...	...	27	92
Arabia	„	19,057	21,218	797	1,428
China, Treaty Ports	„	...	...	155	154
Japan	„	...	...	412	1,086
Mekran and Sonmiani	„	19	20	23	51
Maldive Islands	„	...	...	5	2
Persia	„	10,181	11,821	669	907
Sumatra	„	26	9		
Turkey in Asia	„	275	1,383	746	1,088
Abyssinia	„	2	5	10	51
Egypt	„	...	...	37	156
Madagascar	„	27	186		
Mozambique	„	6	38	673	366
Zanzibar	„	821	2,863	154	403
Other Countries	„	4,556	6,535		
	„	100,312	115,207	77,145	160,674
HEMP, RAW:					
United Kingdom	Cwt.	800	1,960	35,500	31,313
China, Hong Kong	„	10,908	26,428		
Straits Settlements	„	239	590		
Australia	„	...	...	394	594
Austria	„	293	916		
Belgium	„	..	...	36,367	29,201
France	„	...	...	81	49
Italy	„	40	134	124	111
Arabia	„	11	7	1,970	1,859
Mekran and Sonmiani	„	...	...	25	30
Persia	„	...	...	1,186	1,108
Philippine Islands	„	122	242		
Turkey in Asia	„	...	...	31	31
Other Countries	„	...	...	58	64
	„	12,413	30,277	75,736	64,360
HIDES AND SKINS, RAW:					
United Kingdom	Cwt.	20	112	132,150	474,633
Aden	„	1,427	3,995	21	64
Ceylon	„	2,386	8,603	14	50
China, Hong Kong	„	...	...	111	531
Straits Settlements	„	1,584	4,249	13,164	28,804
Mauritius	„	424	1,518		
Natal	„	53	213		
Australia	„	14	94	10	39
Austria	„	...	...	20,167	71,778
Belgium	„	...	...	531	1,549
France	„	...	...	40,315	154,393
Germany	„	...	...	193,202	690,114
Holland	„	...	...	314	890
Italy	„	...	...	54,749	201,814
Spain	„	...	...	973	4,451

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
HIDES AND SKINS—*cont.*					
Turkey in Europe	Cwt.	...	...	487	1,200
Arabia	,,	2,150	8,138	158	378
Mekran and Sonmiani	,,	874	1,831		
Persia	,,	9,506	35,175	1,054	2,525
Turkey in Asia	,,	3,524	9,415	124	366
Egypt	,,	...	...	3,240	9,286
Madagascar	,,	15	32		
Zanzibar	,,	490	960		
United States	,,	...	...	122,508	724,792
Other Countries	,,	5	10		
	,,	22,472	74,345	583,292	2,367,657
IVORY, UNMANUFACTURED:					
United Kingdom	Lbs.	97,000	71,855	199,944	128,944
Aden	,,	28,104	17,247	966	500
Ceylon	,,	...	...	56	39
China, Hong Kong	,,	...	...	25,333	8,414
Straits Settlements	,,	1,579	973	12,131	3,436
Cade Colony	,,	133	86		
France	,,	...	...	118	82
Germany	,,	19,842	12,938	15,891	11,307
Italy	,,	589	306		
Arabia	,,	8	3		
Japan	,,	...	...	13,930	2,286
Siam	,,	112	90		
Abyssinia	,,	5,117	3,255		
Egypt	,,	3,304	2,186		
Mozambique	,,	39,324	21,741		
Zanzibar	,,	257,438	143,663		
	,,	452,550	274,343	268,369	155,008
JEWELLERY: PRECIOUS STONES AND PEARLS, UNSET:					
United Kingdom		—	2,426	—	2,604
Aden		—	5,926		
Ceylon		—	24	—	20
China, Hong Kong		—	69	—	7,492
Straits Settlements		—	500	—	380
Australia		...	...	—	10
Austria		—	869	—	645
France		—	2,570	—	1,757
Italy		—	5,919	—	55
Arabia		—	64,595	—	2,130
China, Treaty Ports		—	37	—	30
Persia		—	55,485	—	3,170
Turkey in Asia		—	40	—	1,241
Abyssinia		—	1,280	—	40
Egypt		—	2,391	—	865
Madagascar		—	120		
Zanzibar		—	113		
		—	142,364	—	20,439
JUTE, RAW:					
United Kingdom	Cwt.	22	21	5,184,268	4,506,827
Ceylon	,,	809	76	15	18
Straits Settlements	,,	2	2	349	254
Australia	,,	...	...	5,195	3,473
Austria	,,	...	...	148,898	153,826
France	,,	...	...	218,578	172,441
Germany	,,	...	...	950,188	748,813
Italy	,,	...	...	185,887	160,923
Spain	,,	...	...	63,286	59,504
Japan	,,	...	...	14,181	10,450
Egypt	,,	...	...	188,211	175,588
United States	,,	...	...	1,573,374	856,376
	,,	833	99	8,532,430	6,848,493

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891–92, distinguishing Countries—*continued.*

ARTICLES AND COUNTRIES.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
VI. Raw Materials and Unmanufactured Articles—*cont.*					
Lac, Stick:					
United Kingdom	Cwt.	...	...	183	513
Ceylon	,,	...	...	1	1
Straits Settlements	,,	573	1,594	3	8
France	,,	...	...	5	19
Arabia	,,	...	...	1	4
United States	,,	...	...	28	172
	,,	573	1,594	221	717
Saltpetre:					
United Kingdom	Cwt.	15	29	130,923	119,756
Ceylon	,,	...	...	864	699
China, Hong Kong	,,	...	...	78,632	78,123
Straits Settlements	,,	...	...	11,285	10,366
Cape Colony	,,	...	...	121	119
Mauritius	,,	...	...	30,552	29,155
Australia	,,	...	...	1,462	1,433
France	,,	...	...	10,185	9,127
Italy	,,	...	...	236	233
Arabia	,,	...	...	157	183
Japan	,,	...	...	204	204
Java	,,	...	...	1,244	704
Mekran and Sonmiani	,,	...	...	1	2
Persia	,,	...	...	20	16
Réunion	,,	...	...	6,086	5,591
Zanzibar	,,	...	...	36	43
United States	,,	...	...	116,172	108,934
West Indies	,,	...	...	1,005	930
	,,	15	29	389,185	365,618
Seeds:					
Linseed:					
United Kingdom	Cwt.	...	...	5,715,124	3,496,769
Aden	,,	...	...	18	42
China, Hong Kong	,,	...	...	213	148
Straits Settlements	,,	...	...	12	8
Mauritius	,,	...	...	194	147
Natal	,,	...	...	187	123
Australia	,,	...	...	12,348	8,176
Austria	,,	...	...	9,440	6,195
Belgium	,,	...	...	857,200	557,496
France	,,	...	...	1,947,741	1,257,439
Germany	,,	...	...	517,774	326,192
Holland	,,	...	...	1,063,864	670,688
Italy	,,	...	...	374,818	250,270
Portugal	,,	...	...	6,000	3,776
Spain	,,	...	...	11,997	7,598
Arabia	,,	...	...	12	8
Persia	,,	3,483	2,090		
Turkey in Asia	,,	2,827	1,696		
Egypt	,,	...	...	169,992	98,095
Mozambique	,,	...	...	9	6
Zanzibar	,,	...	...	12	7
South America	,,	...	...	26,406	18,004
United States	,,	...	...	125,660	76,304
West Indies	,,	...	...	27,574	15,981
	,,	6,310	3,786	10,866,595	6,793,442
Rapeseed:					
United Kingdom	Cwt.	2	2	376,341	159,806
Aden	,,	...	...	3	2
Straits Settlements	,,	...	...	12	6
Mauritius	,,	...	...	6	4
Natal	,,	...	...	7	4
Australia	,,	...	...	313	195
Austria	,,	...	...	1,000	614
Belgium	,,	...	...	778,456	515,119
France	,,	...	...	907,277	624,105
Germany	,,	...	...	368,186	232,002
Holland	,,	...	...	9,040	6,780
Italy	,,	...	...	54,304	36,928

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES.—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
SEEDS—*cont.*					
RAPESEED—*cont.*					
Mekran and Sonmiani	Cwt.	11,835	7,183		
Egypt	,,	...	...	220,897	133,374
Zanzibar	,,	...	...	31	20
West Indies	,,	...	...	2	1
	,,	11,837	7,185	2,615,875	1,708,960
TIL OR JINJILI:					
United Kingdom	Cwt.	...	...	583	517
Gibraltar	,,	...	...	1	1
Aden	,,	642	395		
Ceylon	,,	12,677	8,598	2,700	1,601
Straits Settlements	,,	13,542	10,293	119	79
Mauritius	,,	...	...	49	39
Natal	,,	...	...	2	1
Australia	,,	...	...	15	8
Belgium	,,	...	...	187,951	151,667
France	,,	...	...	1,769,998	1,343,450
Germany	,,	...	...	52,999	42,758
Greece	,,	...	...	45	36
Italy	,,	...	...	245,366	191,039
Russia	,,	...	...	1,990	1,791
Arabia	,,	867	694	2,437	1,932
Mekran and Sonmiani	,,	...	...	9	6
Persia	,,	3,573	2,529	131	104
Turkey in Asia	,,	2,911	2,133		
Egypt	,,	...	...	37,777	30,311
Mozambique	,,	88	72		
Zanzibar	,,	2,184	1,626		
	,,	36,484	26,340	2,302,172	1,765,340
OTHER SEEDS	Cwt.	42,202	42,483	3,381,046	1,942,800
TOTAL SEEDS:					
United Kingdom	Cwt.	501	7,020	6,214,172	3,779,368
Gibraltar	,,	...	...	1	1
Malta	,,	...	...	67	17
Aden	,,	993	562	4,123	2,821
Ceylon	,,	14,914	10,569	41,827	28,914
China, Hong Kong	,,	—	1	1,938	1,672
Straits Settlements	,,	13,798	10,712	47,172	26,281
Cape Colony	,,	...	...	4	4
Mauritius	,,	60	90	4,432	3,004
Natal	,,	...	...	1,148	945
Australia	,,	2	12	12,973	8,594
Austria	,,	12	273	12,440	8,097
Belgium	,,	...	...	2,162,749	1,431,112
France	,,	71	212	6,843,886	4,491,341
Germany	,,	925	858	1,024,123	652,477
Greece	,,	...	...	45	36
Holland	,,	...	...	1,072,904	677,468
Italy	,,	22	435	850,836	576,045
Portugal	,,	...	...	6,000	3,777
Russia	,,	...	...	101,416	52,951
Spain	,,	...	...	11,997	7,598
Turkey in Europe	,,	...	...	1	3
Arabia	,,	1,812	995	8,153	6,717
China, Treaty Ports	,,	6	5		
Japan	,,	1	3	4	5
Java	,,	...	...	260	2,700
Maldive Islands	,,	...	...	144	130
Mekran and Sonmiani	,,	11,892	7,230	621	366
Persia	,,	43,415	34,879	1,013	737
Siam	,,	...	...	53	71
Sumatra	,,	...	...	28	16
Turkey in Asia	,,	6,002	4,013	170	120
Abyssinia	,,	...	...	883	480
Egypt	,,	...	...	521,942	313,538
Madagascar	,,	...	...	2	2
Mozambique	,,	205	144	1,371	680

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
SEEDS—*cont.*					
TOTAL SEEDS—*cont.*					
Réunion	Cwt.	...	...	118	60
Zanzibar	„	2,193	1,632	2,731	3,201
South America	„	...	...	26,477	18,049
United States	„	9	149	159,868	95,149
West Indies	„	...	...	27,596	15,995
	„	96,833	79,794	19,165,688	12,210,542
SHELLS AND COWRIES:					
United Kingdom		—	3	—	17,852
Aden		—	2,898		
Ceylon		—	17,999	—	1,041
China, Hong Kong		...	...	—	16
Straits Settlements		—	9	—	4,999
Austria		...	...	—	189
France		...	...	—	10
Turkey in Europe		...	...	—	10
Arabia		—	6,350	—	189
China, Treaty Ports		—	12		
Maldive Islands		—	1,280		
Mekran and Sonmiani		...	...	—	7
Persia		—	3,114	—	16
Turkey in Asia		...	...	—	263
Abyssinia		—	145		
Egypt		—	379		
Madagascar		—	1,909		
Mozambique		—	1,164		
Zanzibar		—	4,012		
Other Countries		—	1,064		
		—	40,338	—	24,542
SILK, RAW (including chasam and cocoons):					
United Kingdom	Lbs.	2,841	240	604,523	231,097
Gibraltar	„	...	...	36	13
Aden	„	85	19	3,962	1,300
Ceylon	„	441	364	3	1
China, Hong Kong	„	1,526,341	680,541		
Straits Settlements	„	464,981	236,115	1,944	1,296
Belgium	„	159	161		
France	„	1,566	1,118	1,052,686	263,474
Germany	„	3,396	1,533		
Italy	„	278	62	27,206	22,382
Arabia	„	1,000	187	22,439	11,600
China, Treaty Ports	„	567,422	303,413	356	18
Japan	„	50,162	14,885		
Java	„	...	...	60	20
Maldive Islands	„	...	...	10	5
Mekran and Sonmiani	„	...	...	7,717	2,437
Persia	„	32,886	16,060	3,642	2,028
Siam	„	13,788	2,712		
Turkey in Asia	„	...	...	15,830	7,991
Abyssinia	„	...	...	180	150
Egypt	„	35,723	6,593	38,567	10,428
Zanzibar	„	...	...	1,823	1,138
United States	„	...	...	454	347
Other Countries	„	...	...	1,000	400
	„	2,701,069	1,264,003	1,782,438	556,125
WOOD:					
United Kingdom		—	22,845	—	376,820
Gibraltar		...	...	—	14,641
Malta		...	...	—	388
Aden		—	67	—	3,899
Ceylon		—	13,232	—	25,712
China, Hong Kong		—	11	—	34,581
Straits Settlements		—	18,420	—	1,409
Cape Colony		...	...	—	20,267
Mauritius		—	31	—	4,335
Natal		...	...	—	6,373
Australia		—	12	—	240
Austria		—	837		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
WOOD—*cont.*					
Belgium		...	...	—	300
France		...	...	—	27,781
Germany		—	597	—	9,272
Italy		—	5	—	7,112
Sweden		—	5,859		
Arabia		—	129	—	7,782
China, Treaty Ports		—	20	—	11,611
Java		—	35		
Maldive Islands		...	...	—	30
Mekran and Sonmiani		—	75	—	802
Persia		—	7	—	1,222
Russia in Asia		—	16		
Saigon		—	5	—	34
Siam		—	18,732	—	
Sumatra		—	1		
Turkey in Asia		—	19	—	10,347
Abyssinia		...	...	—	377
Egypt		—	10	—	9,172
Madagascar		—	2,568		
Mozambique		...	...	—	638
Zanzibar		—	842	—	5,669
United States		—	628		
West Indies		...	...	—	5
Other Countries		—	116	—	32
		—	85,119	—	580,751
WOOL, RAW :					
United Kingdom	Lbs.	54,809	2,497	34,877,119	1,607,292
Ceylon	„	6,720	78		
Straits Settlements	„	2,993	92		
Australia	„	103,207	8,340		
Austria	„	...	...	47,132	1,600
Belgium	„	...	...	42,914	952
France	„	...	...	539,580	28,426
Germany	„	...	...	5,722	182
Italy	„	...	...	8,400	375
Arabia	„	82,975	2,040		
Japan	„	...	...	60,144	3,580
Mekran and Sonmiani	„	1,318,521	25,667		
Persia	„	2,753,170	78,815	1,820	81
Turkey in Asia	„	23,044	675		
United States	„	...	...	72,648	2,215
		4,345,439	118,204	35,655,479	1,644,703
OTHER SORTS		—	173,833	—	1,329,067
TOTAL RAW MATERIALS AND UNMANUFACTURED ARTICLES		—	3,828,053	—	37,118,970
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED :					
COTTON :					
TWIST AND YARN :					
United Kingdom	Lbs.	49,361,401	3,432,081	180,872	15,452
Aden	„	2,675	211	2,310,171	86,208
Ceylon	„	102,649	5,199	102,644	6,470
China, Hong Kong	„	7,640	197	85,857,128	3,002,522
Straits Settlements	„	64,495	4,970	4,038,953	166,507
Mauritius	„	...	...	1,500	82
Austria	„	557,754	47,687		
Belgium	„	193,900	14,760		
France	„	...	...	63,470	1,792
Germany	„	66,881	5,729		
Holland	„	8,500	768		
Italy	„	29,712	2,565		
Norway	„	2,500	144		
Turkey in Europe	„	...	...	2,000	59
Arabia	„	4,220	282	595,800	30,238
China, Treaty Ports	„	10	0	59,701,625	2,159,194
Japan	„	813	36	6,682,080	254,264
Java	„	7	0	290,890	12,812
Maldive Islands	„	...	...	1,750	91
Mekran and Sonmiani	„	861	26	16,175	964
Persia	„	300	15	1,443,724	84,117

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1891–92, distinguishing Countries—*continued.*

ARTICLES AND COUNTRIES.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
VII. Articles Manufactured and partly Manufactured—*cont.*					
Cotton—*cont.*					
Twist and Yarn—*cont.*					
Philippine Islands	Lbs.	...	...	2,400	94
Siam	,,	...	...	800	31
Sumatra	,,	...	...	14,000	550
Turkey in Asia	,,	...	...	958,780	35,476
Abyssinia	,,	...	...	32,800	2,984
Egypt	,,	...	...	271,248	9,925
Mozambique	,,	...	...	125	8
Zanzibar	,,	...	...	164,421	8,740
Other Countries	,,	...	...	173,700	6,118
	,,	50,404,318	3,514,620	162,902,056	5,884,698
Piece Goods:					
Grey (unbleached):					
United Kingdom	Yds.	1,169,159,446	13,859,129	115,700	1,347
Malta	,,	...	...	440	5
Aden	,,	261,820	4,310	10,813,204	143,194
Ceylon	,,	529,843	8,479	1,586,404	27,047
China, Hong Kong	,,	...	...	70,200	930
Straits Settlements	,,	72,181	1,250	1,610,027	20,647
Mauritius	,,	...	...	2,452,680	34,500
Natal	,,	...	...	120,450	1,634
Australia	,,	...	...	9,080	137
Austria	,,	4,693	394		
France	,,	17,723	266		
Germany	,,	6,000	139		
Holland	,,	20,400	411		
Italy	,,	43,289	3,102		
Arabia	,,	149,247	2,183	4,534,185	58,991
China, Treaty Ports	,,	24	0	7,320,682	96,525
Java	,,	...	...	25,680	399
Maldive Islands	,,	...	...	23,440	300
Mekran and Sonmiani	,,	4,733	45	1,373,977	16,657
Persia	,,	9,476	111	13,525,206	206,165
Siam	,,	1,500	22	596,320	7,231
Turkey in Asia	,,	...	..	5,374,123	72,731
Abyssinia	,,	...	...	1,730,775	18,010
Egypt	,,	...	...	1,127,865	15,289
Mozambique	,,	...	...	9,483,341	90,771
Zanzibar	,,	69,707	764	19,649,440	191,008
United States	,,	2,826,400	55,193	11,000	139
Other Countries	,,	...	...	3,360	35
	,,	1,173,176,482	13,935,798	81,557,579	1,003,692
White (bleached):					
United Kingdom	Yds.	357,793,669	4,855,916	17,305	171
Gibraltar	,,	...	...	1,174	24
Malta	,,	30	1	3,736	85
Aden	,,	13,918	291	1,634,190	20,391
Ceylon	,,	94,001	3,400	1,081,736	21,237
China, Hong Kong	,,	202	5	6,592	129
Straits Settlements	,,	1,635,023	40,662	761,933	12,686
Mauritius	,,	...	...	831,318	13,593
Natal	,,	...	...	68,240	1,520
Canada	,,	...	...	10	1
Australia	,,	...	...	2,530	46
Austria	,,	743,451	24,487		
Belgium	,,	4,166	96	2,376	26
France	,,	79,253	2,975	675	82
Germany	,,	384,088	9,510		
Holland	,,	25,600	498		
Italy	,,	401,242	12,886		
Turkey in Europe	,,	...	...	20	1
Arabia	,,	206,177	2,938	2,074,740	32,765
China, Treaty Ports	,,	756	18	10,500	207
Java	,,	...	...	3,720	56
Maldive Islands	,,	...	...	10,217	140
Mekran and Soumiani	,,	...	...	247,669	2,995
Persia	,,	12,832	220	5,568,930	89,290
Saigon	,,	...	...	4,000	60
Siam	,,	80	2	41,478	587
Turkey in Asia	,,	180	3	374,188	6,200

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
COTTON—*cont.*					
PIECE GOODS—*cont.*					
WHITE (bleached)—*cont.*					
Abyssinia	Yds.	...	...	337,380	4,342
Egypt	„	...	...	189,145	2,884
Mozambique	„	...	...	202,822	3,445
Zanzibar	„	119	2	1,026,355	15,901
West Indies	„	...	...	200	3
Other Countries	„	...	...	15	2
	„	361,394,837	4,953,905	14,503,194	228,869
COLOURED, PRINTED, OR DYED:					
United Kingdom	Yds.	337,990,728	5,392,273	570,667	13,912
Gibraltar	„	...	...	504	10
Malta	„	36	1	1,400	72
Aden	„	37,059	606	3,858,801	71,956
Ceylon	„	45,928	1,021	7,270,186	193,153
China, Hong Kong	„	12,330	480	70,080	1,489
Straits Settlements	„	2,049,787	58,521	10,171,630	310,191
Mauritius	„	1,520	29	1,343,811	28,273
Natal	„	...	...	306,537	8,104
Australia	„	...	...	3,245	122
Austria	„	962,601	30,853	33	2
Belgium	„	421,142	9,195	372	10
France	„	639,243	26,915		
Germany	„	1,044,836	39,882		
Holland	„	2,170,581	65,835		
Italy	„	2,574,515	71,981		
Arabia	„	97,648	2,096	6,816,457	131,278
China, Treaty Ports	„	36	3	98,504	2,875
Japan	„	2,175	82	1,200	15
Java	„	...	...	7,810	191
Maldive Islands	„	...	...	8,225	198
Mekran and Sonmiani	„	56	0	1,670,553	23,565
Persia	„	38,485	851	21,041,432	484,319
Siam	„	...	...	497,755	13,537
Sumatra	„	...	...	820	37
Turkey in Asia	„	4,338	138	6,582,597	143,835
Abyssinia	„	45	1	273,468	6,304
Egypt	„	5,916	325	193,873	4,626
Mozambique	„	...	...	3,105,845	59,356
Réunion	„	...	...	2,100	80
Zanzibar	„	9,877	109	8,270,316	150,656
Other Countries	„	7,798	219	216	4
	„	348,116,680	5,701,416	72,168,437	1,648,170
OTHER COTTON MANUFACTURES		—	583,733	—	200,437
TOTAL COTTON MANUFACTURES (excluding twist and yarn):					
United Kingdom		—	24,614,008	—	112,132
Gibraltar		...	...	—	71
Malta		—	12	—	229
Aden		—	5,211	—	239,069
Ceylon		—	14,040	—	257,523
China, Hong Kong		—	526	—	3,957
Straits Settlements		—	101,275	—	348,120
Cape Colony		...	...	—	9
Mauritius		—	29	—	80,918
Natal		...	...	—	13,008
Canada		...	...	—	1
Australia		...	...	—	2,073
Austria		—	82,118	—	32
Belgium		—	14,209	—	53
France		—	31,744	—	415
Germany		—	71,296	—	4,880
Holland		—	76,911	—	697
Italy		—	96,661	—	3,795
Turkey in Europe		—	68	—	4
Arabia		—	7,389	—	229,111
China, Treaty Ports		—	16	—	99,637
Japan		—	1,142	—	15

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.	IMPORTS.		EXPORTS.	
	Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*				
COTTON—*cont.*				
TOTAL COTTON MANUFACTURES (excluding twist and yarn)—*cont.*				
Java	...	...	—	743
Maldive Islands	...	...	—	659
Mekran and Sonmiani	—	46	—	43,268
Persia	—	1,235	—	803,596
Saigon	—	36	—	60
Siam	—	24	—	21,562
Sumatra	...	...	—	160
Turkey in Asia	—	187	—	232,876
Abyssinia	—	1	—	28,834
Egypt	—	325	—	24,265
Mozambique	...	...	—	165,657
Réunion	...	...	—	80
Zanzibar	—	875	—	363,036
United States	—	55,249	—	575
West Indies	...	...	—	3
Other Countries	—	219	—	45
	—	25,174,852	—	3,081,168
FLAX, MANUFACTURES OF:				
United Kingdom	—	115,187	—	325
Aden	—	1	—	115
Ceylon	—	61	—	242
China, Hong Kong	...	...	—	276
Straits Settlements	—	77	—	303
Mauritius	...	...	—	72
Austria	—	132		
Belgium	—	163		
France	...	...	—	70
Germany	—	599		
Arabia	—	6	—	208
Maldive Islands	...	...	—	2
Persia	...	...	—	222
Turkey in Asia	—	37		173
Mozambique	...	...	—	215
Réunion	...	3		
Zanzibar	...	...	—	60
United States	—	213		
	—	116,479	—	2,283
HEMP, MANUFACTURES OF (excluding cordage):				
United Kingdom	—	6,594		
Ceylon	—	11	—	195
Austria	—	106		
Egypt	...	...	—	34
	—	6,711	—	229
JUTE, MANUFACTURES OF:				
United Kingdom	—	24,675	—	323,873
Gibraltar	...	...	—	352
Malta	...	...	—	2,706
Aden	—	386	—	3,795
Ceylon	—	33,593	—	17,212
China, Hong Kong	...	...	—	137,510
Straits Settlements	—	4,262	—	275,256
Cape Colony	...	...	—	102,444
Mauritius	—	2,081	—	28,107
Natal	—	1	—	48,923
Canada	...	...	—	212
Australia	—	71	—	554,206
Austria	—	217	—	378
Belgium	—	30	—	40,870
France	...	...	—	15,907
Germany	—	54	—	23,358
Greece	...	...	—	362
Turkey in Europe	...	...	—	8,457
Arabia	—	465	—	3,003
China, Treaty Ports	...	...	—	7,729
Japan	...	...	—	12,686
Java	...	...	—	3,300

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
JUTE, MANUFACTURES OF—*cont.*					
Maldive Islands		...	...	—	5
Mekran and Sonmiani		—	104	—	605
Persia		—	26	—	12,299
Philippines		...	...	—	682
Saigon		...	...	—	1,487
Siam		—	10	—	2,456
Sumatra		...	...	—	261
Turkey in Asia		...	1	—	93,678
Abyssinia		—	77		
Egypt		—	18	—	146,743
Mozambique		—	30	—	8,985
Réunion		...	...	—	2,467
Zanzibar		—	44	—	3,003
South America		...	...	—	128,541
United States		—	42	—	496,028
West Indies		...	...	—	153
Other Countries		...	...	—	5,155
		—	66,187	—	2,513,194
SILK:					
PIECE GOODS:					
United Kingdom	Yds.	4,504,315	672,909	1,110,053	96,362
Gibraltar	„	...	...	19,491	1,552
Malta	„	152	22	59,734	5,073
Aden	„	59	4	43,548	3,847
Ceylon	„	7,838	886	118,903	11,480
China, Hong Kong	„	4,846,497	511,283	20,742	1,534
Straits Settlements	„	122,349	17,112	61,791	6,625
Mauritius	„	...	...	17,052	1,480
Natal	„	...	...	18,101	2,006
Canada	„	...	...	30	2
Australia	„	...	...	5,929	562
Austria	„	55,678	6,806	1,698	141
Belgium	„	12,125	1,343		
France	„	1,271,499	150,891	425,778	42,242
Germany	„	71,854	10,446	2,775	574
Greece	„	...	...	565	70
Holland	„	1,162	165		
Italy	„	450,424	48,013	1,404	100
Turkey in Europe	„	...	...	122	10
Arabia	„	2,191	255	145,412	11,920
China, Treaty Ports	„	326,590	21,211		
Japan	„	78,149	7,739		
Java	„	...	...	1,437	94
Maldive Islands	„	...	...	425	88
Mekran and Sonmiani	„	...	...	1,339	184
Persia	„	10,872	1,629	96,380	10,358
Saigon	„	7,588	820	100	20
Siam	„	159	16		
Turkey in Asia	„	1,474	157	80,322	8,602
Abyssinia	„	...	...	7,699	767
Egypt	„	19,579	1,666	137,014	9,752
Mozambique	„	...	...	3,404	312
Réunion	„	...	...	32	10
Zanzibar	„	190	34	39,978	4,447
United States	„	...	...	846	115
	„	11,790,744	1,453,407	2,422,104	220,329
GOODS OF SILK MIXED WITH OTHER MATERIALS:					
United Kingdom	Yds.	163,934	13,710	1,552	144
Gibraltar	„	...	...	200	20
Malta	„	...	...	20,184	2,893
Aden	„	...	...	12,612	1,030
Ceylon	„	3,578	274	1,660	261
China, Hong Kong	„	5,327	395		
Straits Settlements	„	250	44	16,998	1,399
Mauritius	„	...	...	2,850	185
Natal	„	...	...	487	66
Austria	„	213,812	15,831		
Belgium	„	38,431	4,668		
France	„	2,403,627	209,207	3,705	724
Germany	„	76,985	6,173		
Italy	„	218,737	21,803		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
SILK—*cont.*					
GOODS OF SILK MIXED WITH OTHER MATERIALS—*cont.*					
Turkey in Europe	Yds.	...	...	14,636	1,505
Arabia	„	6,865	306	98,672	10,784
Japan	„	696	42		
Persia	„	1,537	296	51,066	6,072
Saigon	„	414	40		
Turkey in Asia	„	412	27	22,763	3,254
Abyssinia	„	1,631	105	600	37
Egypt	„	9,866	540	9,120	1,064
Madagascar	„	...	...	450	120
Mozambique	„	...	...	245	35
Zanzibar	„	5	10	658	78
United States	„	...	...	750	80
	„	3,146,107	273,471	259,208	29,751
OTHER SILK MANUFACTURES	Lbs.	29,800	23,817	961	859
TOTAL SILK MANUFACTURES		—	1,750,695	—	250,939
WOOL:					
PIECE GOODS:					
United Kingdom	Yds.	10,490,416	970,576	9,353	1,734
Gibraltar	„	...	...	160	24
Malta	„	38	4	1,424	201
Aden	„	140	6	14,474	1,479
Ceylon	„	1,492	122	474,245	32,371
China, Hong Kong	„	409	63	16,127	1,131
Straits Settlements	„	25,827	2,442	35,712	3,981
Mauritius	„	...	...	10,617	772
Natal	„	...	...	2,063	207
Australia	„	630	96	395	41
Austria	„	569,078	58,584	140	22
Belgium	„	70,687	6,627		
France	„	244,136	23,214	897	203
Germany	„	2,237,685	240,913	1,931	102
Holland	„	167,588	31,619		
Italy	„	21,428	1,492		
Arabia	„	1,114	64	11,805	1,424
Java	„	...	...	345	27
Mekran and Sonmiani	„	...	...	407	121
Persia	„	6,304	573	69,255	13,235
Saigon	„	242	38		
Siam	„	...	...	2,022	118
Turkey in Asia	„	18	1	6,349	958
Abyssinia	„	458	40	710	101
Egypt	„	460	207	4,399	461
Mozambique	„	...	...	38,212	3,930
Zanzibar	„	368	16	15,284	1,171
United States	„	...	...	672	248
Other Countries	„	...	...	120	10
		13,838,518	1,336,697	717,118	64,072
SHAWLS:					
United Kingdom	No.	653,961	145,291	2,079	4,868
Gibraltar	„	...	...	23	13
Malta	„	5	2	1	3
Aden	„	...	...	27	24
Ceylon	„	100	34	972	512
China, Hong Kong	„	48	11	84	28
Straits Settlements	„	566	168	131	37
Cape Colony	„	...	...	1	5
Mauritius	„	...	...	24	6
Natal	„	...	...	69	130
Australia	„	...	...	1	5
Austria	„	46,469	18,408		
Belgium	„	...	...		
France	„	199	60	54	78
Germany	„	93,574	33,409	52	55
Italy	„	671	97		
Arabia	„	...	...	6,913	826
Japan	„	...	...	14	33
Persia	„	1,125	269	20,059	8,546
Turkey in Asia	„	...	...	9	45

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
WOOL—*cont.*					
SHAWLS—*cont.*					
Abyssinia	No.	...	...	993	175
Egypt	„	...	...	734	1,310
Zanzibar	„	...	...	53	85
United States	„	...	...	13	13
	„	796,718	197,749	32,306	16,797
OTHER WOOLLEN MANUFACTURES	Lbs.	1,788,010	227,585	770,620	92,221
TOTAL WOOLLEN MANUFACTURES		—	1,762,031	—	173,090
APPAREL (including haberdashery, millinery, &c., but excluding hosiery):					
United Kingdom		—	866,291	—	83,090
Gibraltar		—	94	—	1,391
Malta		—	29	—	1,771
Aden		—	1,043	—	8,373
Ceylon		—	9,641	—	10,574
China, Hong Kong		—	18,069	—	1,216
Straits Settlements		—	81,868	—	28,929
Cape Colony		—	7	—	3,610
Mauritius		—	10	—	11,476
Natal		—	11	—	11,969
Australia		—	818	—	6,827
Austria		—	120,029	—	1,343
Belgium		—	8,174	—	43
France		—	200,499	—	1,904
Germany		—	39,735	—	1,470
Greece		...	...	—	10
Holland		—	1,080		
Italy		—	15,525	—	1,170
Portugal		—	8		
Russia		...	...	—	30
Sweden		—	1		
Turkey in Europe		...	...	—	74
Arabia		—	579	—	2,994
China, Treaty Ports		—	189	—	474
Cochin China		—	9	—	295
Japan		—	6,335	—	422
Java		...	...	—	3,429
Maldive Islands		...	...	—	79
Mekran and Sonmiani		...	...	—	138
Persia		—	1,472	—	4,807
Siam		—	104	—	227
Sumatra		...	...	—	295
Turkey in Asia		—	1,289	—	2,657
Abyssinia		—	30	—	550
Egypt		—	24,115	—	3,930
Madagascar		...	...	—	39
Mozambique		...	...	—	9,843
Réunion		—	50	—	417
Zanzibar		—	62	—	12,127
South America		...	...	—	90
United States		—	861	—	994
West Indies		...	...	—	50
Other Countries		...	...	—	116
		—	1,398,027	—	219,243
ARMS, AMMUNITION, &c. (excluding military accoutrements):					
United Kingdom		—	199,971	—	7,238
Gibraltar		—	7		
Malta		...	...	—	5
Aden		—	7	—	281
Ceylon		—	638	—	390
China, Hong Kong		—	55	—	24
Straits Settlements		—	49	—	388
Mauritius		—	4		
Natal		...	8		
Australia		...	...	—	56
Austria		—	104	—	15
Belgium		—	572		
France		—	96	—	19
Germany		—	4,641	—	66
Italy		—	66		
China, Treaty Ports		...	...	—	14
Japan		—	2		
Mekran and Sonmiani		—	1	—	14

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
ARMS, AMMUNITION, &c. (excluding military accoutrements)—*cont.*					
Persia		—	28	—	666
Russia in Asia		—	5		
Siam		—	3	—	25
Turkey in Asia		...	...	—	2
Egypt		—	39	—	31
South America		—	5		
United States		—	221	—	10
		—	206,517	—	9,244
BOOKS AND PRINTED MATTER (including maps and charts) :					
United Kingdom	Cwt.	15,421	213,358	958	17,081
Gibraltar	„	0	11	1	8
Malta	„	...	...	1	62
Aden	„	12	206	232	1,527
Ceylon	„	30	615	250	2,465
China, Hong Kong	„	14	261	12	245
Straits Settlements	„	74	697	2,331	14,611
Mauritius	„	...	...	26	271
Natal	„	...	...	35	82
Australia	„	12	173	4	84
Austria	„	82	1,091	15	211
Belgium	„	53	598		
France	„	48	664	17	262
Germany	„	22	356	8	182
Greece	„	0	10	—	1
Holland	„	2	38		
Italy	„	34	247	12	344
Portugal	„	1	10		
Turkey in Europe	„	7	122	1	12
Arabia	„	8	89	194	2,279
China, Treaty Ports	„	1	17	6	76
Japan	„	...	...	1	19
Java	„	...	...	—	12
Mekran and Sonmiani	„	...	...	2	12
Persia	„	10	196	386	4,333
Siam	„	...	...	4	27
Turkey in Asia	„	18	330	15	139
Abyssinia	„	...	...	6	35
Egypt	„	158	2,038	31	277
Mozambique	„	...	...	24	196
Zanzibar	„	5	49	44	433
South America	„	...	...	7	78
United States	„	41	418	25	313
West Indies	„	...	...	7	80
	„	16,053	221,594	4,655	45,757
CABINET WARE AND FURNITURE :					
United Kingdom		—	62,603	—	14,201
Gibraltar		...	...	—	1,419
Malta		—	34	—	1,386
Aden		—	48	—	1,238
Ceylon		—	1,539	—	2,150
China, Hong Kong		—	3,258	—	407
Straits Settlements		—	1,770	—	1,404
Mauritius		—	36	—	538
Natal		...	...	—	424
Australia		—	14	—	404
Austria		—	15,046	—	263
Belgium		—	714	—	30
France		—	504	—	636
Germany		—	18,068	—	634
Holland		—	20		
Italy		—	6,025	—	317
Sweden		...	1		
Turkey in Europe		...	...	—	6
Arabia		—	48	—	771
China, Treaty Ports		—	4		
Japan		—	2,987	—	14
Java		...	...	—	11
Maldive Islands		...	...	—	21
Mekran and Sonmiani		...	...	—	59
Persia		—	8	—	882
Sumatra		—	1		
Turkey in Asia		—	2	—	1,341
Abyssinia		...	...	—	188
Egypt		—	136	—	2,499
Mozambique		—	4	—	895

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891–92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
CABINET WARE AND FURNITURE—*cont.*					
Zanzibar		—	2	—	5,550
United States		—	386	—	994
Other Countries		...	...	—	8
		—	113,258	—	38,690
COIR, MANUFACTURES OF (excluding rope):					
United Kingdom	Cwt.	38	127	221,346	185,473
Aden	„	...	...	498	389
Ceylon	„	15,150	15,273	196	190
China, Hong Kong	„	...	...	72	101
Straits Settlements	„	...	...	1,344	1,605
Cape Colony	„	...	...	329	424
Mauritius	„	5	5	705	584
Natal	„	...	...	1,536	1,440
Australia	„	...	...	1,744	2,734
Austria	„	...	...	439	508
Belgium	„	...	...	4,799	5,016
France	„	...	...	23,161	17,947
Germany	„	...	...	25,301	22,840
Italy	„	...	...	1,313	1,263
Portugal	„	...	...	1,035	1,035
Arabia	„	...	...	944	661
China, Treaty Ports	„	0	1		
Japan	„	...	...	235	287
Maldive Islands	„	1,124	1,114		
Mekran and Sonmiani	„	...	...	182	119
Persia	„	...	...	463	332
Siam	„	...	...	3	2
Turkey in Asia	„	...	...	384	236
Abyssinia	„	...	...	116	87
Egypt	„	...	...	1	2
Madagascar	„	7	5		
Mozambique	„	...	...	49	39
Zanzibar	„	...	...	51	39
United States	„	...	...	4,416	3,149
	„	16,324	16,525	290,662	246,502
CORALS:					
United Kingdom	Lbs.	387	300	12	12
Ceylon	„	8,957	7,750	1,090	777
China, Hong Kong	„	4,673	3,847		
Straits Settlements	„	1,319	2,089	7,738	7,211
Austria	„	2,501	2,501		
France	„	2,818	2,040		
Italy	„	210,833	148,534	3,193	3,336
Japan	„	296	930		
Persia	„	...	...	4,989	2,890
Sumatra	„	...	...	6,278	4,022
Turkey in Asia	„	...	...	328	504
Egypt	„	76	122		
	„	231,860	168,113	23,628	18,752
HIDES AND SKINS:					
United Kingdom	Cwt.	1,888	39,707	232,319	2,127,774
Malta	„	...	...	3	37
Aden	„	...	...	64	371
Ceylon	„	162	634	252	2,880
China, Hong Kong	„	...	...	115	1,327
Straits Settlements	„	66	865	6,799	69,480
Mauritius	„	...	...	26	305
Australia	„	2	20	112	1,336
Austria	„	1	13	592	7,191
Belgium	„	...	...	2,010	27,543
France	„	34	867	1,667	26,241
Germany	„	14	728	58	343
Italy	„	...	...	180	978
Arabia	„	0	30	8	15
Japan	„	...	...	46	711
Persia	„	172	1,095	51	260
Turkey in Asia	„	110	1,351	8	103
Egypt	„		...	13	93
Réunion	„	...	...	8	36
Zanzibar	„	...	...	66	394
United States	„	...	...	46,075	551,663
	„	1,944	45,310	290,412	2,819,081

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
IVORY:					
United Kingdom		—	14,464	—	829
Aden		...	...	—	3
China, Hong Kong		—	77		
Straits Settlements		—	19		
France		—	1,605		
Germany		—	6,208		
Zanzibar		—	20		
		—	22,393	—	832
JEWELLERY AND PLATE:					
United Kingdom		—	50,608	—	18,389*
Gibraltar		...	...	—	541
Malta		—	41	—	1,772
Aden		—	372	—	1,254
Ceylon		—	145	—	4,100
China, Hong Kong		—	4,537	—	744
Straits Settlements		—	2,294	—	2,804
Cape Colony		...	...	—	4
Mauritius		...	...	—	404
Natal		...	...	—	114
Australia		—	8	—	744
Austria		—	14,833	—	134
Belgium		—	633		
France		—	9,353	—	621
Germany		—	2,860	—	307
Greece		...	...	—	16
Italy		—	2,160		
Arabia		—	147	—	37
China, Treaty Ports		—	47	—	50
Japan		—	3	—	20
Java		...	...	—	67
Persia		—	166	—	51
Turkey in Asia		—	30	—	55
Abyssinia		...	...	—	31
Egypt		—	337	—	1,006
Mozambique		...	...	—	40
Zanzibar		—	1,371	—	837
United States		—	45	—	145
Other Countries		—	110		
		—	90,100	—	34,287
LAC (excluding stick lac and lac-dye):					
United Kingdom	Cwt.	...	...	76,387	410,370
Aden	„	...	...	1	4
Ceylon	„	...	...	—	6
China, Hong Kong	„	...	...	371	2,028
Straits Settlements	„	...	...	356	1,988
Australia	„	...	...	995	5,011
Austria	„	...	...	3,388	17,634
Belgium	„	...	...	484	1,958
France	„	...	...	3,979	21,704
Germany	„	...	...	3,096	15,610
Holland	„	...	...	74	335
Italy	„	...	...	532	2,933
Turkey in Europe	„	...	...	1	9
Arabia	„	...	...	7	30
Japan	„	...	...	3	15
Maldive Islands	„	...	...	1	5
Persia	„	...	...	44	182
Turkey in Asia	„	...	...	6	37
Egypt	„	...	...	7	42
Zanzibar	„	...	...	1	6
United States	„	...	...	47,783	270,623
	„	...	...	137,466	750,530

* The value of plate of Indian manufacture exported to the United Kingdom was Rx. 2,989.

No. 12—*concluded.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1891-92, distinguishing COUNTRIES—*concluded.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
PAINTS AND COLOURS:					
United Kingdom	Cwt.	116,807	157,098	152	552
Aden	„	5	7	437	2,038
Ceylon	„	198	301	302	504
China, Hong Kong	„	2,109	32,030	151	375
Straits Settlements	„	198	2,504	142	363
Mauritius	„	8	24		
Natal	„	...	...	8	21
Australia	„	...	...	4	6
Austria	„	90	867		
Belgium	„	18,178	22,091	—	1
France	„	1,665	899		
Germany	„	1,192	5,301	8	29
Holland	„	6	5		
Italy	„	1,374	2,191		
Sweden	„	1,110	148		
Turkey in Europe	„	...	...	1	21
Arabia	„	2	1	222	541
Maldive Islands	„	...	...	10	4
Mekran and Sonmiani	„	...	...	1	2
Persia	„	8,782	2,132	168	538
Siam	„	...	...	149	132
Turkey in Asia	„	...	...	651	940
Abyssinia	„	...	...	30	38
Egypt	„	...	...	11	213
Mozambique	„	...	...	743	671
Zanzibar	„	1	3	520	597
United States	„	51	145		
	„	151,776	225,747	3,710	7,586
STATIONERY (including paper and printing materials):					
United Kingdom		—	479,978	—	1,084
Gibraltar		—	281		
Malta		...	...	—	200
Aden		—	239	—	1,797
Ceylon		—	170	—	5,258
China, Hong Kong		—	10,941	—	659
Straits Settlements		—	17,334	—	1,348
Mauritius		—	2	—	120
Natal		...	...	—	134
Australia		...	...	—	17
Austria			122,265	—	172
Belgium		—	22,413	—	245
France		—	2,030		
Germany		—	49,932	—	31
Holland		—	906		
Italy		—	4,750	—	3
Norway		—	506		
Sweden		—	1,610		
Arabia		—	5	—	430
China, Treaty Ports		—	38	—	165
Japan		—	146	—	14
Java		...	...	—	10
Mekran and Sonmiani		—	3	—	7
Persia		—	1,434	—	3,335
Siam		—	25	—	254
Turkey in Asia		—	2	—	1,275
Abyssinia		...	...	—	1
Egypt		—	36	—	6
Mozambique		...	...	—	1,170
Zanzibar		—	298	—	904
United States		—	562	—	378
Other Countries		...	...	—	20
		—	715,906	—	19,037
OTHER SORTS		—	4,013,277	—	590,369
TOTAL ARTICLES MANUFACTURED AND PARTLY MANUFACTURED		—	39,628,342	—	16,705,512
GRAND TOTAL		—	66,587,457	—	108,036,010

No. 13.

Quantity and Value of Imports of Government Stores into British India.

Articles.	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Apparel (including haberdashery, but excluding hosiery):										
United Kingdom	—	33,846	—	49,192	—	45,572	—	68,077	—	45,476
Other Countries	—	926	—	180	—	1,046	0	472	—	125
	—	34,772	—	49,372	—	46,618	—	68,549	—	45,601
Arms, Ammunition, &c.:										
United Kingdom	—	92,573	—	156,498	—	262,373	—	276,061	—	496,774
Other Countries	—	2,152	—	4,703	—	13,206	—	3,314	—	5,243
	—	94,725	—	161,201	—	275,579	—	279,375	—	502,017
Books and Printed Matter (including maps, charts, &c.):										
United Kingdom	—	64,912	—	96,903	—	70,843	—	67,199	—	65,150
Other Countries	—	189	—	155	—	67	—	111	—	340
	—	65,101	—	97,058	—	70,910	—	67,310	—	65,490
Building and Engineering Materials:										
United Kingdom	—	27,104	—	79,207	—	75,770	—	84,461	—	9,166
Carriages, Carts, &c. (excluding railway carriages), and parts thereof:										
United Kingdom	—	1,499	—	292	—	113	0	470	—	11
Other Countries	0	0	0	0	—	4	0	0	0	0
	—	1,499	—	292	—	117	0	470	—	11
Chemical Products:										
United Kingdom	—	11,719	—	4,583	—	10,990	—	13,300	—	10,261
Other Countries	0	0	—	5	—	715	—	0	—	759
	—	11,719	—	4,588	—	11,705	—	13,300	—	11,020
Coal (including coke and patent fuel):	Tons.		Tons.		Tons.		Tons.		Tons.	
United Kingdom	37,802	78,808	44,365	102,298	55,187	120,629	32,340	62,373	36,653	58,098
Other Countries	0	0	0	0	10	20	0	0	0	0
	37,802	78,808	44,365	102,298	55,197	120,649	32,340	62,373	36,653	58,098
Cotton:										
Twist and Yarn:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom	728	127	161*	186	1,318	218	2,155	143	6,312	143
Manufactures:										
Piece Goods:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom	285,021	5,014	268,192*	4,507	247,842	4,349	220,606	5,115	242,860	4,742
Other sorts:										
United Kingdom	—	760	—	4,232	—	2,849	—	1,293	—	1,087
	—	5,901	—	8,925	—	7,416	—	6,551	—	5,972

* Figures defective.

No. 13—*continued.*

QUANTITY and VALUE of IMPORTS of GOVERNMENT STORES into BRITISH INDIA—*continued.*

ARTICLES.	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
DRUGS AND MEDICINES:										
Quinine:	Lbs.		Lbs.							
United Kingdom -	1,014	3,262	552	1,122	0	0	0	0	0	0
Other Sorts:										
United Kingdom -	—	13,660	—	16,914	—	15,791	—	10,780	—	20,293
Other Countries -	—	20	—	15	0	0	0	0	0	0
	—	16,942	—	18,051	—	15,791	—	10,780	—	20,293
EARTHENWARE AND PORCELAIN:										
United Kingdom -	—	2,524	—	4,948	—	5,721	—	6,913	—	13,474
FLAX:										
Twist and Yarn:	Lbs.		Lbs		Lbs.		Lbs.		Lbs.	
United Kingdom -	0	0	—	129	2,135	257	3,651	368	6,626	587
Manufactures:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom {	207,125	11,170	231,415*	9,693	229,245*	12,166	396,985	16,454	308,850	11,642
	—	217	—	3,265	—	1,315	—	1,327	—	2,417
	—	11,387	—	13,087	—	13,738	—	18,149	—	14,646
GLASS AND GLASSWARE:										
United Kingdom -	—	11,844	—	15,501	—	9,361	—	11,774	—	10,632
Other Countries -	0	0	0	0	—	3	0	0	—	1
	—	11,844	—	15,501	—	9,364	—	11,774	—	10,633
HARDWARE AND CUTLERY:										
United Kingdom -	—	53,405	—	76,350	—	80,901	—	81,795	—	108,893
Other Countries -	—	350	—	877	—	183	—	161	—	13
	—	53,755	—	77,227	—	81,084	—	81,956	—	108,906
INSTRUMENTS AND APPARATUS:										
Musical:										
United Kingdom -	—	502	—	814	—	430	—	482	—	624
Other Countries -	0	0	0	0	0	0	—	2	0	0
Scientific, &c.:										
United Kingdom -	—	38,079	—	48,965	—	27,876	—	34,899	—	48,429
Other Countries -	—	716	—	475	—	25	—	385	—	175
	—	39,297	—	50,254	—	28,331	—	35,275	—	49,228
LEATHER MANUFACTURES:										
Boots and Shoes:	Pairs.		Pairs.		Pairs.		Pairs.		Pairs.	
United Kingdom -	121,511	78,595	50,469	33,542	84,894*	50,031	2,235	1,357	19,166	15,404
Other Countries -	0	0	0	0	0	0	0	0	0	0
Other Sorts:										
United Kingdom -	—	3,917	—	10,888	—	4,064	—	17,613	—	6,820
Other Countries -	0	0	—	6	—	12	—	51	0	2
	—	82,512	—	44,436	—	54,107	—	19,021	—	22,226

* Figures defective.

No. 13—*continued.*

QUANTITY and VALUE of IMPORTS of GOVERNMENT STORES into BRITISH INDIA—*continued.*

ARTICLES.	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
LIQUORS:										
Ale, Beer, and Porter:	Gals.		Gals.		Gals.		Gals.		Gals.	
United Kingdom	387,788	17,415	415,816	22,220	364,899	22,599	236,700	14,608	98,800	7,250
Other Countries	0	0	0	0	0	0	0	0	1	0
	387,788	17,415	415,816	22,220	364,899	22,599	236,700	14,608	98,801	7,250
Spirits:										
United Kingdom	8,647	1,820	4,391	747	622	580	17	6	188	67
Other Countries	0	0	0	0	1,861	233	57	7	0	0
	8,647	1,820	4,391	747	2,483	813	74	13	188	67
Wines and Liqueurs:										
United Kingdom	705	366	2,220	786	961*	565	0	0	0	0
Other Countries	0	0	0	0	0	0	0	0	0	0
	705	366	2,220	786	961	565	—	—	—	—
Total Liquors	397,140	19,601	422,427	23,753	368,343*	23,977	236,774	14,621	98,989	7,317
MACHINERY AND MILLWORK:										
United Kingdom	—	60,315	—	83,348	—	56,043	—	96,620	—	68,361
Other Countries	—	50	—	9,518	0	0	0	0	0	0
	—	60,365	—	92,866	—	56,043	—	96,620	—	68,361
METALS:	Cwt.		Cwt.		Cwt.		Cwt.		Cwt.	
United Kingdom	316,610	262,309	385,878*	351,714	246,644*	277,639	377,566*	378,312	421,761	378,171
Other Countries	0	0	476	556	33	83	33	7	27	300
	316,610	262,309	386,354	352,270	246,677	277,722	377,599	378,319	421,788	378,471
PAPER AND PASTEBOARD:										
United Kingdom	—	107,993	—	78,457	—	34,481	—	55,056	—	43,808
Other Countries	—	6	0	0	0	0	0	0	—	6
	—	107,999	—	78,457	0	34,481	0	55,056	—	43,814
PRINTING AND LITHOGRAPHING MATERIALS:										
United Kingdom	—	6,950	—	5,418	—	5,511	—	4,564	—	3,035
Other Countries	—	18	—	19	0	0	0	63	0	0
	—	6,968	—	5,437	—	5,511	—	4,627	—	3,035

* Figures defective.

No. 13—*concluded.*

QUANTITY and VALUE of IMPORTS of GOVERNMENT STORES into BRITISH INDIA—*concluded.*

ARTICLES.	1887-88.		1888-89.		1889-90.		1890-91.		1891-92.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
RAILWAY PLANT AND ROLLING STOCK:										
Locomotives and Carriages, &c.:										
United Kingdom -	—	290,856	—	451,519	—	205,857	—	188,5.9	—	272,986
Materials for Construction:										
United Kingdom -	—	954,107	—	735,826	—	879,892	—	1,046,614	—	748,312
Other Countries -	—	3,698	—	13,355	0	0	0	0	0	0
	—	1,248,661	—	1,200,700	—	1,085,749	—	1,234,933	—	1,021,298
STATIONERY (excluding paper):										
United Kingdom -	—	32,025	—	30,319	—	23,082	—	26,046	—	24,950
Other Countries -	—	179	—	49	—	1,735	—	95	—	0
	—	32,204	—	30,368	—	24,817	—	26,141	—	24,950
TELEGRAPH MATERIALS:										
United Kingdom -	—	103,266	—	81,492	—	66,204	—	76,452	—	95,105
Other Countries -	—	451	—	243	—	295	—	428	—	83
	—	103,717	—	81,735	—	66,499	—	76,880	—	95,188
WOOL, MANUFACTURES OF:										
Piece goods:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom -	736,134	103,989	856,744	147,663	679,773*	134,024	709,205	126,650	681,581	109,076
Other sorts:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom -	3,002	3,614	9,234*	2,935	15,870	8,290	39,998*	7,737	32,783	3,789
	—	107,603	—	150,598	—	142,314	—	134,387	—	112,865
ALL OTHER ARTICLES:										
United Kingdom -		129,577	—	123,316	—	94,588	—	134,499	—	131,162
Other Countries -	—	2,905	—	4,204	—	8,767	—	18,130	—	21,684
	-	132,482	—	127,520	—	103,355	—	152,629	—	152,846
TOTAL IMPORTS OF GOVERNMENT STORES:										
United Kingdom -	—	2,608,139	—	2,835,789	—	2,610,974	—	2,917,123	—	2,816,195
Other Countries -	—	11,660	—	34,360	—	26,394	—	23,347	—	28,731
Total -	—	2,619,799	—	2,870,149	—	2,637,368	—	2,940,470	—	2,844,926

* Figures defective.

No. 14.

QUANTITY and VALUE of EXPORTS of GOVERNMENT STORES (distinguishing Indian and Foreign Produce and Manufacture*) from BRITISH INDIA.

ARTICLES.	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
APPAREL :										
United Kingdom	—	915	—	200	—	43	—	1,302	—	696
	—	*2,109*	—	*677*	—	*36*	—	*817*	—	*624*
Other Countries	—	2,664	—	2,244	—	1,047	—	1,355	—	3,010
	—	*934*	—	*671*	—	*333*	—	*1,010*	—	*2,682*
ARMS AND AMMUNITION :										
United Kingdom	—	136	—	24	0	0	—	1,940	—	4
	—	*146*	—	*3,716*	—	*5,726*	—	*2,651*	—	*47,400*
Other Countries	—	5,065	—	4,235	—	3,121	—	3,077	—	16,676
	—	*2,622*	—	*4,625*	—	*6,596*	—	*9,712*	—	*9,424*
CHEMICALS, DRUGS AND MEDICINES:										
United Kingdom	—	133	—	*60*	0	0	0	*1,990*	*0*	*0*
	—	*804*								
Other Countries	—	3	—	14	—	50	—	3	—	1,475
	—	*707*	—	*589*	—	*762*	—	*2,468*	—	*1,103*
COTTON :										
Twist and Yarn:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom	0	0	0	0	0	0	0	0	—	—
Other Countries	0	0	0	0	0	0	*112*	*8*	*0*	*0*
	65	2	40	1	57	2	8	0	43	1
Manufactures:										
Piece goods:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom	0	0	0	0	0	0	0	0	—	—
Other Countries	256	6	7,550	273	165	3	166	3	188	3
	205	*5*	0	0	*58*	*6*	0	0	*1,345*	*33*
Other sorts:										
United Kingdom	0	0	0	0	—	*29*	0	0	*0*	*0*
Other Countries	—	83	—	46	—	99	—	239	—	307
	—	*52*	—	*21*	—	*32*	—	*485*	—	*72*
FLAX, MANUFACTURES OF :	Yds.		Yds.		Yds.		Yds.			
United Kingdom	0	0	0	0	0	0	0	0	0	0
					—	*5*	0	0	*0*	*0*
Other Countries	—	*102*	—	*169*	—	16	0	0	—	38
					—	*166*	—	*210*	—	*94*
METALS:	Cwt.		Cwt.		Cwt.		Cwt.		Cwt.	
United Kingdom	—	*5*	0	0	—	2	—	0	*0*	*0*
Other Countries	79	27,302	—	28,950	—	23,332	27†	32,518	35†	18,220
	40	*97*	*191†*	*498*	*227*	*1,676*	*540*	*745*	*36*	*90*
TELEGRAPH MATERIALS :										
United Kingdom	0	0	—	*120*	—	*2,578*	—	0	—	*600*
Other Countries	—	92	—	*3,598*	—	202	—	30	—	16
	—	*3,267*			—	*3,277*	—	*2,916*	—	*8,560*
WOOL, MANUFACTURES OF:	Lbs.									
	50	*30*								
United Kingdom	Yds.		—	590	0	0	0	0	0	0
	1,711	*279*			Yds.		Yds.		Yds.	
			Yds.		200	11	800	35	3	0
	989	*77*	*843*	*93*	*1,626*	*187*	*1,205*	*74*	*510*	*199*
Other Countries	Lbs.						Lbs.		Lbs.	
	499	27	36	12	0	0	1,481	80	2,482	228
							37†	*12*	*297*	*24*
ALL OTHER ARTICLES:										
United Kingdom	—	7,240	—	2,805	—	1,430	—	6,025	—	2,748
	—	*2,823*	—	*7,506*	—	*1,124*	—	*6,010*	—	*2,508*
Other Countries	—	6,850	—	5,360	—	6,334	—	8,323	—	11,382
	—	*7,615*	—	*4,264*	—	*5,311*	—	*7,590*	—	*9,365*
TOTAL EXPORTS OF GOVERNMENT STORES:										
United Kingdom	—	14,620	—	15,698	—	10,973	—	20,735	—	54,580
Other Countries	—	57,572	—	55,663	—	52,563	—	70,891	—	83,062
Total	—	72,192	—	71,361	—	63,536	—	91,626	—	137,582

* The figures in *italics* represent re-exports. † Figures defective.

No. 15.

Imports of Treasure from different Countries.

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
GOLD:					
United Kingdom	955,996	1,065,659	2,443,874	3,814,111	1,565,648
British Possessions:					
Malta	0	0	0	1,938	2,646
Aden	137,108	110,350	35,706	64,122	229,463
Ceylon	998	0	9,505	1,737	14,101
China, Hong Kong	392,627	457,248	737,698	736,267	959,850
Straits Settlements	38,498	14,473	9,286	27,249	4,823
Mauritius	0	0	0	169	840
Natal	0	0	0	1,301	0
Australia	540,347	511,928	635,989	1,104,057	552,252
	1,109,578	1,093,999	1,428,184	1,936,840	1,763,975
Foreign Countries.					
Austria	15,361	4,590	783	6,264	32
France	47,687	70,801	124,392	128,287	104,935
Italy	0	10,238	7,278	0	2,165
Russia	0	0	13,750	2,148	0
Turkey in Europe	140	0	200	550	0
Arabia	193,901	212,533	157,541	105,666	186,950
China, Treaty Ports	582,085	478,039	596,981	227,163	240,520
Persia	5,110	4,241	5,124	8,348	19,512
Turkey in Asia	54,077	20,250	35,379	38,702	11,374
Abyssinia	23,320	495	714	10,818	9,469
Egypt	204,186	110,761	186,515	176,542	168,117
Madagascar	0	0	600	104	3,043
Mozambique	42,587	42,536	66,431	18,738	11,238
Zanzibar	2,025	4,946	3,281	21,051	31,951
United States	0	0	0	5,500	0
	1,170,479	959,430	1,198,969	749,881	789,306
Total	3,236,053	3,119,088	5,071,027	6,500,832	4,118,929
SILVER:					
United Kingdom	6,877,250	6,882,639	9,769,128	7,540,834	6,202,748
British Possessions:					
Aden	13,507	17,750	78,323	93,096	32,687
Ceylon	61,319	53,489	155,027	93,720	70,572
China, Hong Kong	1,518,604	1,250,103	613,864	2,294,553	1,729,863
Straits Settlements	64,184	26,533	47,478	1,294,705	47,083
Cape Colony	0	0	0	0	100
Mauritius	40,996	10,380	420	48,320	35,858
Australia	0	22,602	113,812	500,313	552,637
	1,698,610	1,380,857	1,008,924	4,324,707	2,468,800
Foreign Countries:					
Austria	65,352	132,427	108,104	972,842	97,380
France	31,669	109,382	204,885	101,124	55,839
Italy	471,309	177,210	20,000	100,752	298
Arabia	213,902	235,182	408,609	419,546	269,520
China, Treaty Ports	109,238	688,450	317,600	1,335,216	765,300
Japan	0	0	37,500	109,060	0
Mekran and Sonmiani	655	670	140	2,852	2,245
Persia — *Private*	71,655	75,748	125,835	179,013	89,113
Persia — *Government*	0	0	200	15,000	0
Siam	1,466	287	0	0	0
Turkey in Asia	88,865	66,909	122,055	194,392	26,972
Abyssinia	2,855	0	5,378	39,994	3,639
Egypt	18,658	9,435	6,624	28,190	8,318
Madagascar	0	2,495	12,377	10,088	12,535
Mozambique	1,629	648	3,173	2,783	2,115
Zanzibar	19,580	37,506	45,282	10,883	24,040
United States	917,110	925,724	188,730	42,310	568,200
Other Countries	0	303	3,930	4,068	6,671
	2,013,943	2,462,376	1,610,422	3,568,113	1,932,185
Total	10,589,803	10,725,872	12,388,474	15,433,654	10,603,733

No. 15—*concluded.*

IMPORTS of TREASURE from DIFFERENT COUNTRIES—*concluded.*

——	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
TOTAL GOLD AND SILVER:					
UNITED KINGDOM	7,833,246	7,948,298	12,213,002	11,354,946	7,768,396
BRITISH POSSESSIONS:					
Malta	0	0	0	1,938	2,646
Aden	150,615	128,100	114,029	157,218	262,150
Ceylon	62,317	53,489	164,532	95,457	84,673
China, Hong Kong	1,911,231	1,707,351	1,351,562	3,030,820	2,689,712
Straits Settlements	102,682	41,005	56,764	1,321,953	51,906
Cape Colony	0	0	0	0	100
Mauritius	40,996	10,380	420	48,489	36,698
Natal	0	0	0	1,301	0
Australia	540,347	534,530	749,800	1,604,370	1,104,889
	2,808,188	2,474,855	2,437,107	6,261,546	4,232,774
FOREIGN COUNTRIES:					
Austria	80,713	137,018	108,887	979,105	97,412
France	79,356	180,183	329,277	229,411	160,774
Italy	471,309	187,448	27,278	100,753	2,463
Russia	0	0	13,750	2,148	0
Turkey in Europe	140	0	200	550	0
Arabia	407,803	447,715	566,150	525,213	456,471
China, Treaty Ports	691,320	1,166,489	914,582	1,562,379	1,005,820
Japan	0	0	37,500	109,060	0
Mekran and Sonmiani	655	670	140	2,852	2,245
Persia — *Private*	76,765	79,989	130,958	187,361	108,624
Persia — *Government*	0	0	200	15,000	0
Siam	1,466	287	0	0	0
Turkey in Asia	142,942	87,159	157,434	233,094	38,346
Abyssinia	26,175	495	6,092	50,812	13,108
Egypt	222,844	120,196	193,139	204,731	176,435
Madagascar	0	2,495	12,977	10,191	15,578
Mozambique	44,216	43,184	69,604	21,521	13,353
Zanzibar	21,605	42,452	48,564	31,935	55,992
United States	917,110	925,724	188,730	47,810	568,200
Other Countries	0	303	3,930	4,068	6,671
	3,184,422	3,421,807	2,809,392	4,317,994	2,721,492
GRAND TOTAL	13,825,856	13,844,960	17,459,501	21,934,486	14,722,662

No. 16.

Exports of Treasure to different Countries.

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
GOLD:					
United Kingdom	233,746	286,187	444,722	821,873	1,683,481
British Possessions:					
Gibraltar	0	0	0	0	39
Malta	4	0	7	0	0
Aden	95	187	160	133	478
Ceylon	1,418	2,000	1,470	0	0
China, Hong Kong	8	0	0	0	0
Straits Settlements	1,523	1,400	0	1,394	307
	3,048	3,587	1,637	1,527	824
Foreign Countries:					
Austria	2,707	3,111	1,351	4,515	491
France	3,371	2,300	3,170	0	14,630
Turkey in Europe	0	0	0	0	860
Arabia	0	0	0	792	190
Java	0	2,975	0	0	0
Persia	700	534	2,166	1,019	572
Turkey in Asia	0	6,450	1,890	30,687	4,089
Egypt	0	0	15	40	0
Zanzibar	0	0	773	4,207	0
	6,778	15,380	9,365	41,260	20,832
Total	243,572	305,154	455,724	864,660	1,705,137
SILVER:					
United Kingdom — *Private*	29,038	22,725	6,705	30,209	87,091
United Kingdom — *Government*	0	0	0	1,650	0
British Possessions:					
Aden — *Private*	27,162	73,160	70,173	31,480	108,548
Aden — *Government*	87,970	77,300	60,000	47,000	140,000
Ceylon	501,260	530,800	602,221	650,750	769,150
China, Hong Kong	36,250	28,700	28,656	400	0
Straits Settlements	31,922	76,707	112,557	38,668	22,146
Mauritius	900	139,450	115,300	0	0
Other Countries	0	4	0	0	0
	685,464	926,121	988,907	768,298	1,039,844
Foreign Countries:					
Austria	20	172	179	12	17
France	25,905	52,528	91,405	31,650	35,086
Greece	0	0	50	0	0
Italy	4,387	1,500	200	7,630	0
Arabia — *Private*	71,770	115,759	132,442	89,486	171,197
Arabia — *Government*	0	0	1,000	0	0
China, Treaty Ports	0	10,068	0	83,851	0
Java	4,600	15,240	1,800	0	0
Maldive Islands	0	0	0	100	0
Mekran and Sonmiani — *Private*	6,108	7,799	510	192	650
Mekran and Sonmiani — *Government*	700	3,170	3,200	2,482	3,330
Persia — *Private*	112,811	184,562	102,722	52,412	110,175
Persia — *Government*	2,000	380	202	140	170
Philippine Islands	0	13,800	0	0	0
Turkey in Asia	16,040	21,610	18,432	1,475	82,106
Abyssinia	0	3,545	1,200	0	845
Egypt	0	0	16	90	1,600
Mozambique	14,939	16,548	9,630	6,500	6,000
Zanzibar	387,180	83,586	91,418	182,051	43,438
United States	90	80	0	0	0
Other Countries	0	0	580	290	0
	646,550	530,347	454,986	458,361	454,614
Total	1,361,052	1,479,193	1,450,598	1,258,518	1,581,549

No. 16—*concluded.*

EXPORTS of TREASURE to DIFFERENT COUNTRIES—*concluded.*

	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
TOTAL GOLD AND SILVER:					
UNITED KINGDOM — *Private*	262,784	308,911	451,426	852,083	1,770,572
UNITED KINGDOM — *Government*	0	0	0	1,650	0
BRITISH POSSESSIONS:					
Gibraltar	0	4	0	0	39
Malta	4	0	7	0	0
Aden — *Private*	27,257	73,348	70,333	31,613	109,026
Aden — *Government*	87,970	77,300	60,000	47,000	140,000
Ceylon	502,678	532,800	603,691	650,750	769,150
China, Hong Kong	36,258	28,700	28,656	400	0
Straits Settlements	33,445	78,107	112,557	40,062	22,453
Mauritius	900	139,450	115,300	0	0
	688,512	929,709	990,544	769,825	1,040,668
FOREIGN COUNTRIES:					
Austria	2,727	3,293	1,530	4,526	509
France	29,276	54,828	94,575	31,650	49,716
Greece	0	0	50	0	0
Italy	4,387	1,500	200	7,630	0
Turkey in Europe	0	0	0	0	860
Arabia — *Private*	71,770	115,759	132,442	90,278	171,386
Arabia — *Government*	0	0	1,000	0	0
China, Treaty Ports	0	10,068	0	83,851	0
Java	4,600	18,215	1,800	0	0
Maldive Islands	0	0	0	100	0
Mekran and Sonmiani — *Private*	6,108	7,799	510	192	650
Mekran and Sonmiani — *Government*	700	3,170	3,200	2,482	3,330
Persia — *Private*	113,511	185,096	104,889	53,431	110,747
Persia — *Government*	2,000	380	202	140	170
Philippine Islands	0	13,800	0	0	0
Turkey in Asia	16,040	28,060	20,323	32,162	86,195
Abyssinia	0	3,545	1,200	0	845
Egypt	0	0	31	130	1,600
Mozambique	14,939	16,548	9,630	6,500	6,000
Zanzibar	387,180	83,586	92,190	186,258	43,438
United States	90	80	0	0	0
Other Countries	0	0	580	290	0
	653,328	545,727	464,352	499,620	475,446
GRAND TOTAL	1,604,624	1,784,347	1,906,822	2,123,178	3,286,686

No. 17.

GROSS AMOUNT of CUSTOMS DUTY collected on ARTICLES of MERCHANDISE.

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
IMPORT DUTIES:					
Arms, Ammunition, and Military Stores:					
Firearms, and parts thereof	16,644	18,439	17,985	21,241	24,457
Gunpowder, common	188	1,261	207	583	775
„ sporting	1,945	2,036	1,754	1,911	2,359
Other sorts	3,593	4,353	3,921	4,313	4,139
	22,370	26,089	23,867	28,048	31,730
Liquors:					
Ale, Beer, and Porter	13,179	15,205	17,439	17,325	18,659
Spirits	462,035	482,854	492,371	533,385	518,838
Wines and Liqueurs	51,545	50,074	49,236	50,010	51,884
Other sorts	133	151	219	180	205
	527,792	548,284	559,265	600,900	589,586
Opium	255	306	285	325	349
Salt	1,894,487	2,301,427	2,379,311	2,449,084	2,531,738
Petroleum	13,709	117,489	162,392	165,040	174,662
Articles not specified	135	159	133	138	132
TOTAL	2,458,748	2,993,754	2,542,121	2,614,587	2,706,881
EXPORT DUTIES:					
Rice, in the husk	11,164	10,218	9,136	13,868	12,267
„ not in the husk	745,334	602,455	709,146	907,171	866,946
TOTAL	756,493	612,673	718,282	921,039	879,213
GRAND TOTAL	3,215,246	3,606,427	3,843,535	4,164,574	4,207,410

No. 18.

CUSTOMS TARIFF.

Articles.	Tariff Valuation.	Rate of Duty.
IMPORT TARIFF.		
ARMS, AMMUNITION, AND MILITARY STORES:		
Fire-arms and parts thereof—		Rs. As.
1. Fire-arms other than pistols	Each	50 0
2. Barrels for the same, whether single or double	„	30 0
3. Pistols	„	15 0
4. Barrels for the same, whether single or double	„	10 0
5. Springs used for fire-arms	„	8 0
6. Gunstocks, sights, blocks and rollers	„	5 0
7. Revolver-breeches, for each cartridge they will carry	„	2 8
8. Extractors, nippers, heel-plates, pins, screws, tangs, bolts, thumb-pieces, triggers, trigger-guards, hammers, pistons, plates, and all other parts of a fire-arm not herein otherwise provided for, and all tools used for cleaning or putting together or loading the same	„	1 8
9. Machines for making or loading or closing cartridges	„	10 0
10. „ for capping cartridges	„	2 8

Proviso.—No duty in excess of 10 per cent. ad valorem shall be levied upon any of the articles mentioned in the above list when they are imported in reasonable quantity, for his own private use, by any person lawfully entitled to possess the same. When any articles which have been otherwise imported, and upon which duty has been levied or is leviable under this number, are purchased retail from the importer by a person lawfully entitled as aforesaid, in reasonable quantity, for his own private use, the importer may apply to the Customs Collector for a refund or remission (as the case may be) of so much of the duty thereon as is in excess of 10 per cent. ad valorem; and if such Collector is satisfied as to the identity of the articles, and as to the importer being in other respects entitled to such refund or remission, he shall grant the same accordingly.

Exemptions:—

1. Articles falling under the 5th, 6th, 8th, 9th, or 10th head of the above list, when they appertain to a fire-arm falling under the 1st or 3rd head, and are fitted into the same case with such fire-arm.

2. Arms forming part of the regular equipment of an officer entitled to wear diplomatic, military, or police uniform.

3. A sword, a revolver, or a pair of pistols when accompanying a military officer or commissioned officer of a volunteer corps, or certified by the commandant of the corps to be imported by the officer for the purposes of his equipment.

4. Morris's tubes and patent ammunition when imported by officers commanding British and native regiments or volunteer corps for the instruction of their men.

5. Swords imported for presentation as army or volunteer prizes.

6. Ornamental arms possessing antiquarian value, provided the chief Customs authority is satisfied in each case that the arms are practically unserviceable, and that weapons intended for offensive or defensive purposes are not imported under cover of the exemption.

7. Bows and arrows.

8. Bullets, bird-shot, gunwads, and wire cartridges.

9. Bullet moulds.

10. Arms which, having paid duty at Aden on import into that settlement, are subsequently within three years imported into any Customs port of British India.

Gunpowder, common	Rs. As. 0 5 per lb.	10 per cent.
„ sporting	1 0 „	
All other sorts of arms, ammunition, and military stores	Ad valorem	10 per cent.

Explanation.—The expression "Arms, Ammunition, and Military Stores" includes—
(*a*) all articles which are "arms" or "ammunition" within the meaning of the Indian Arms Act, 1878;
(*b*) any articles which the Governor-General in Council may from time to time, by notification in the Gazette of India, are declared to be "military stores" for the purposes of the Indian Tariff Act, 1882.

CUSTOMS TARIFF—*continued.*

Articles.	Tariff Valuation.	Rate of Duty.
LIQUORS:		
Ale, beer and porter, except when condensed or concentrated -	Per Impl. Gallon or 6 quart bottles.	Rs. As. 0 1
Cider, and other fermented liquors - - - - -		
Spirit, intended to be used exclusively in arts or manufactures, or in chemistry, which has been rendered effectually and permanently unfit for human consumption - - - - - -	Ad valorem.	5 per cent.
„ when used in drugs, medicines or chemicals in a proportion less than 20 per cent. of spirit of the strength of London proof	„	„
„ when so used in a proportion of 20 per cent. and upwards -	Per Impl. gallon or 6 quart bottles of the strength of London proof.	Rs. 6, and the duty to be increased or reduced in proportion as the strength of the spirit exceeds or is less than London proof.
„ perfumed, in wood or in bottles - - - - - -	Per Impl. gallon or 6 quart bottles.	Rs. As. 8 0
„ other sorts - - - - - - - -	Per Impl. gallon or 6 quart bottles of the strength of London proof.	Rs. 6, and the duty to be increased or reduced in proportion as the strength of the spirit exceeds or is less than London proof.
Wines:		
Champagne and all other sparkling wines - - - -	Per Impl. gallon or 6 quart bottles.	Rs. As. 2 8
All other sorts - - - - - - - - -	„	1 0
Liqueurs - - - - - - - - -	„	6 0
OPIUM (not covered by a Government pass) - - - - -	Per seer of 80 tolas -	24 0
PETROLEUM - - - - - - - - -	Per Impl. gallon -	Rs. As. P. 0 0 6
Including also the liquids commonly known by the names of rock oil, Rangoon oil, Burma oil, kerosine, paraffine oil, mineral oil, petroline, gasoline, benzol, benzoline, benzine, and any inflammable liquid which is made from petroleum, coal, schist, shale, peat or any other bituminous substance or from any products of petroleum.		
Exception.—Petroleum which has its flashing point at or above two hundred degrees of Fahrenheit's thermometer and is proved to the satisfaction of the Customs Collector to be intended to be used exclusively for the batching of jute or other fibre or for lubricating purposes.		
SALT - - - - - - - - -	Per Indian maund of 82⅔ lbs. avoirdupois weight.	The rate at which excise duty is for the time being leviable on salt manufactured in the place where the import takes place, viz., Re. 1 in Burma and Rs. 2.8 elsewhere.

EXPORT TARIFF.

RICE (whether husked or unhusked) - - - - -	Per Indian maund of 82⅔ lbs. avoirdupois weight.	Rs. As. 0 3

No. 19.

DISTRIBUTION of PRIVATE IMPORT TRADE among the PRINCIPAL PORTS.

		1887-88.	1888-89.	1889-90.	1890-91.	1891-92.
BENGAL :						
Calcutta	Merchandise	23,243,196	25,651,273	25,057,869	25,982,918	25,297,249
	Treasure	1,283,717	1,416,628	1,183,232	3,918,449	3,359,985
Chittagong	Merchandise	54,796	49,919	67,676	87,553	48,559
	Treasure	6	0	0	0	0
Other Ports	Merchandise	432	904	6,025	9,846	1,055
	Treasure	0	0	0	0	0
BOMBAY :						
Bombay	Merchandise	25,260,261	26,383,859	26,341,117	27,512,160	25,716,304
	Treasure	12,166,777	12,108,778	15,871,836	17,581,724	11,015,950
Karachi	Merchandise	2,583,077	3,562,957	3,384,799	3,702,344	3,972,239
	Treasure	144,782	176,495	119,172	84,823	111,891
Other Ports	Merchandise	226,653	119,970	81,922	31,013	44,302
	Treasure	0	0	600	0	0
MADRAS :						
Madras	Merchandise	4,426,238	4,958,544	5,426,067	5,473,167	5,131,745
	Treasure	137,427	82,393	151,749	250,240	150,798
Tuticorin	Merchandise	268,199	313,982	293,619	306,184	315,647
	Treasure	11,650	2,000	21,458	250	0
Negapatam	Merchandise	286,580	281,395	210,882	198,862	203,170
	Treasure	1,156	1,287	525	1,917	1,988
Coconada	Merchandise	78,186	4,227	2,611	2,628	69,906
	Treasure	0	0	0	0	0
Tellicherry	Merchandise	5,241	10,013	9,832	17,293	10,162
	Treasure	0	0	0	1,980	0
Calicut	Merchandise	18,748	36,478	32,485	29,939	55,993
	Treasure	0	0	0	0	0
Cochin	Merchandise	13,089	15,388	16,988	15,269	33,240
	Treasure	0	0	0	0	0
Mangalore	Merchandise	29,065	26,012	26,431	26,472	22,903
	Treasure	0	0	0	0	0
Other Ports	Merchandise	201,710	150,019	147,403	149,511	161,169
	Treasure	49,886	50,868	97,371	69,520	64,981
BURMA:						
Rangoon	Merchandise	5,506,935	4,852,089	5,269,837	5,357,201	5,383,848
	Treasure	19,464	3,537	9,752	9,108	16,480
Moulmein	Merchandise	138,742	121,275	123,852	89,247	83,906
	Treasure	966	390	1,387	650	0
Bassein	Merchandise	14,161	4,145	35,261	19,787	14,132
	Treasure	500	0	0	0	0
Akyab	Merchandise	8,011	8,749	3,661	5,185	5,585
	Treasure	0	0	0	0	0
Other Ports	Merchandise	21,493	19,120	21,784	18,319	16,331
	Treasure	9,531	2,584	2,218	826	590
TOTAL IMPORTS	Merchandise	62,384,813	66,570,318	66,560,121	69,034,898	66,587,445
	Treasure	13,825,856	13,844,960	17,459,300	21,919,487	14,722,663

No. 20.

Distribution of Private Export Trade among the Principal Ports.

		1887–88.	1888–89.	1889–90.	1890–91.	1891–92.
Bengal:						
Calcutta	Merchandise	35,712,656	36,636,990	38,054,509	35,767,655	38,635,852
	Treasure	87,812	52,900	133,354	168,962	277,804
Chittagong	Merchandise	1,202,203	1,085,227	1,444,889	1,236,586	896,830
	Treasure	0	0	0	0	0
Other Ports	Merchandise	193,635	98,624	173,291	255,036	408,319
	Treasure	0	0	0	0	0
Bombay:						
Bombay	Merchandise	34,394,325	38,908,473	39,406,899	37,859,409	40,635,677
	Treasure	1,130,916	1,454,842	1,566,791	1,682,879	2,671,170
Karachi	Merchandise	2,603,708	3,814,256	5,020,923	4,699,755	7,338,746
	Treasure	58,921	74,846	48,016	24,639	40,285
Other Ports	Merchandise	921	45	58	58	14
	Treasure	107	295	0	192	252
Madras:						
Madras	Merchandise	4,373,884	4,338,134	4,913,214	4,547,573	3,786,228
	Treasure	210,354	112,505	60,142	123,308	54,000
Tuticorin	Merchandise	1,345,698	1,341,108	1,971,123	1,729,851	1,332,579
	Treasure	12,500	0	30,000	55,000	75,000
Negapatam	Merchandise	576,960	571,256	541,428	510,147	486,360
	Treasure	305	168	0	1,766	50
Coconada	Merchandise	625,600	797,593	1,037,968	784,338	665,633
	Treasure	0	0	0	0	0
Tellicherry	Merchandise	732,317	883,975	758,363	890,415	992,837
	Treasure	0	0	0	0	0
Calicut	Merchandise	420,530	484,788	388,162	346,356	512,084
	Treasure	629	741	2,232	4,200	16,575
Cochin	Merchandise	365,963	432,054	369,112	308,338	430,523
	Treasure	0	0	0	0	0
Mangalore	Merchandise	290,106	452,068	337,614	340,695	505,883
	Treasure	0	0	0	0	0
Other Ports	Merchandise	1,001,209	1,024,758	1,197,951	1,256,658	1,325,849
	Treasure	10,610	7,200	1,200	1,500	1,250
Burma:						
Rangoon	Merchandise	4,390,781	4,457,932	5,623,864	7,080,362	7,230,680
	Treasure	1,800	0	185	9,460	6,800
Moulmein	Merchandise	648,888	664,710	674,285	784,602	1,041,352
	Treasure	0	0	0	0	0
Akyab	Merchandise	931,054	453,226	607,677	783,348	897,650
	Treasure	0	0	0	0	0
Bassein	Merchandise	617,372	504,205	842,150	903,951	848,709
	Treasure	0	0	0	0	0
Other Ports	Merchandise	43,652	28,749	33,382	50,598	64,135
	Treasure	0	0	0	0	0
Total Exports	Merchandise	90,471,462	96,978,171	103,396,862	100,135,731	108,035,940
	Treasure	1,513,954	1,703,497	1,831,920	2,071,906	3,143,186

No. 21.

VESSELS ENTERED and CLEARED, distinguishing STEAMERS and SAILING VESSELS, and STEAMER which proceeded viâ SUEZ CANAL.

	1887–88.		1888–89.		1889–90.		1890–91		1891–92.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	ENTERED.									
STEAM:										
Viâ Suez Canal -	784	1,407,997	755	1,408,331	677	1,331,767	752	1,487,111	1,043	2,019,483
„ other Routes	801	1,003,275	853	1,098,600	995	1,321,288	1,295	1,540,302	1,209	1,459,506
	1,585	2,411,272	1,608	2,506,931	1,672	2,653,055	2,047	3,027,413	2,252	3,478,989
SAILING - -	3,723	1,102,942	3,573	943,248	3,610	1,005,126	3,443	835,428	3,434	829,386
TOTAL -	5,308	3,514,214	5,181	3,450,179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375
	CLEARED.									
STEAM:										
Viâ Suez Canal -	949	1,637,738	967	1,735,626	931	1,723,597	965	1,821,405	1,268	2,412,341
„ other Routes	656	834,484	665	825,805	753	955,043	1,058	1,161,577	977	1,074,911
	1,605	2,472,222	1,632	2,561,431	1,684	2,678,640	2,023	2,982,982	2,245	3,487,252
SAILING - -	3,980	1,203,029	3,672	971,722	3,707	978,765	3,510	839,131	3,227	795,024
TOTAL -	5,585	3,675,251	5,304	3,533,153	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276

No. 22.

VESSELS ENTERED and CLEARED, distinguishing STEAMERS and SAILING VESSELS with CARGOES and in BALLAST.

	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	ENTERED.									
WITH CARGOES:										
Steam - -	1,389	2,160,852	1,351	2,157,769	1,355	2,200,273	1,570	2,480,276	1,617	2,561,855
Sailing - -	2,579	778,568	2,354	625,375	2,416	619,901	2,091	510,976	2,153	455,262
	3,968	2,939,420	3,705	2,783,144	3,771	2,820,174	3,661	2,991,252	3,770	3,017,117
IN BALLAST:										
Steam - -	196	250,420	257	349,162	317	452,782	477	547,137	635	917,184
Sailing - -	1,144	324,374	1,219	317,873	1,194	385,225	1,352	324,452	1,281	374,124
	1,340	574,794	1,476	667,035	1,511	838,007	1,829	871,589	1,916	1,291,258
Total -	5,308	3,514,214	5,181	3,450,179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375
	CLEARED.									
WITH CARGOES:										
Steam - -	1,532	2,360,937	1,567	2,487,854	1,627	2,623,030	1,831	2,870,715	2,157	3,427,402
Sailing - -	3,164	1,135,446	2,856	896,598	2,854	905,306	2,717	772,693	2,551	708,371
	4,696	3,496,383	4,423	3,384,452	4,481	3,528,336	4,548	3,643,408	4,708	4,135,773
IN BALLAST:										
Steam - -	73	111,285	65	55,610	57	55,610	192	112,267	88	59,850
Sailing -	816	67,583	816	73,459	853	73,459	793	66,438	676	86,653
	889	178,868	881	129,069	910	129,069	985	178,705	764	146,503
Total -	5,585	3,675,251	5,304	3,657,405	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276

No. 23.

Vessels Entered and Cleared, distinguishing Countries.

	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	ENTERED.									
UNITED KINGDOM	967	1,674,284	859	1,554,279	698	1,341,475	730	1,433,654	716	1,450,896
BRITISH POSSESSIONS:										
Malta	0	0	0	0	1	46	0	0	6	8,254
Aden	76	107,365	122	182,339	115	173,482	106	161,872	112	179,150
Ceylon	2,429	363,151	2,504	418,914	2,395	433,404	2,681	537,722	2,452	460,681
China, Hong Kong	81	133,359	95	158,094	87	147,448	101	162,579	92	153,377
Straits Settlements	340	364,628	308	343,480	375	437,321	380	480,268	368	480,732
Cape Colony	36	31,995	26	28,086	59	78,383	43	55,264	58	78,498
Mauritius	98	113,047	78	99,623	82	119,534	90	130,182	92	106,321
Natal	41	22,903	35	27,039	48	50,148	41	39,883	42	43,148
Demerara	0	0	0	0	2	3,058	0	0	1	1,425
Australia	66	104,997	59	94,074	69	104,330	20	37,061	30	49,311
Other Countries	0	0	1	1,469	1	1,620	2	3,267	2	2,393
	3,167	1,241,445	3,228	1,353,118	3,234	1,548,784	3,464	1,608,098	3,255	1,563,290
FOREIGN COUNTRIES:										
Austria	31	59,651	21	42,923	25	53,391	22	49,161	25	52,105
Belgium	5	7,048	6	7,858	12	23,429	13	23,508	11	19,752
France	0	0	2	2,550	2	2,166	1	851	29	57,751
Germany	15	17,079	7	7,726	25	37,434	54	88,870	87	142,277
Greece	0	0	1	1,997	0	0	0	0	0	0
Italy	19	48,683	20	52,205	18	49,407	19	47,141	59	113,681
Portugal	0	0	0	0	0	0	0	0	1	1,355
Russia in Europe	1	1,647	0	0	0	0	0	0	0	0
Spain	0	0	0	0	0	0	0	0	3	4,895
Turkey in Europe	0	0	0	0	0	0	0	0	0	0
Arabia	275	79,812	263	66,490	300	76,265	275	71,771	310	76,651
China, Treaty Ports	18	34,806	15	26,819	17	34,394	22	43,182	20	38,990
Japan	5	7,394	2	2,844	8	11,885	12	18,296	3	4,834
Java	17	19,702	6	9,450	26	34,163	18	26,181	23	35,067
Maldive Islands	24	2,766	28	3,124	24	2,982	14	1,751	22	2,815
Mekran and Sonmiani	191	8,990	165	7,989	216	10,690	227	10,683	245	11,579
Persia	130	67,593	138	62,390	133	61,234	126	61,909	112	59,617
Russia in Asia	13	19,485	35	53,547	26	45,172	30	49,329	51	79,947
Siam	18	1,986	16	4,556	17	6,293	32	4,905	24	4,208
Sumatra	7	2,377	12	10,118	8	6,760	11	15,683	7	9,043
Turkey in Asia	215	37,003	199	42,480	269	57,728	194	48,192	282	65,166
Egypt	6	8,019	9	11,838	6	8,993	10	13,553	182	298,794
Mozambique	27	12,544	25	13,298	25	12,991	10	3,256	18	3,454
Réunion	14	7,589	21	11,879	21	14,022	22	17,078	22	14,477
Zanzibar	43	26,737	36	18,966	40	23,455	47	29,860	48	24,376
America, South and Central	15	14,187	5	5,740	36	48,500	37	48,282	55	68,402
United States	58	85,315	43	64,927	80	132,225	56	101,945	41	72,743
West Indies	2	2,749	0	0	1	1,147	1	2,352	0	0
Other Countries	25	25,323	19	11,128	15	13,126	43	43,350	35	32,210
	1,174	593,485	1,094	542,782	1,350	767,922	1,296	821,089	1,715	1,294,189
Total	5,308	3,514,214	5,181	3,450 179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375

No. 23—*concluded.*

VESSELS ENTERED and CLEARED, distinguishing COUNTRIES—*concluded.*

	1887-88.		1888-89.		1889-90.		1890-91.		1891-92.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	CLEARED.									
UNITED KINGDOM	829	1,410,846	771	1,380,150	749	1,368,914	643	1,226,001	703	1,399,668
BRITISH POSSESSIONS:										
Malta	19	23,952	19	26,789	15	22,252	39	60,284	27	41,758
Aden	12	10,824	47	60,735	44	59,627	48	61,965	44	59,081
Ceylon	2,590	368,837	2,550	326,616	2,546	354,474	2,731	400,589	2,332	338,006
China, Hong Kong	82	134,600	86	141,972	80	127,374	87	142,691	92	152,537
Straits Settlements	263	247,036	233	232,497	260	266,361	306	340,453	281	324,628
Cape Colony	16	5,133	12	4,370	8	4,166	8	6,351	7	6,277
Mauritius	73	87,159	52	65,793	55	84,870	57	83,125	80	89,694
Natal	26	9,500	23	10,303	19	10,756	10	6,121	21	14,910
Demerara	14	16,224	12	13,006	12	15,467	11	15,364	14	18,665
West Indies	13	13,383	12	13,805	9	9,343	10	11,331	19	18,226
Australia	26	39,822	19	29,566	23	39,071	21	38,351	23	40,709
Other Countries	7	7,541	7	7,079	7	8,813	6	6,924	7	8,263
	3,141	963,411	3,072	932,531	3,078	1,002,574	3,334	1,173,549	2,947	1,112,754
FOREIGN COUNTRIES:										
Austria	37	69,687	25	52,061	26	56,975	26	54,945	23	50,264
Belgium	49	81,040	72	122,900	70	140,439	56	114,998	96	186,418
Denmark	2	2,656	0	0	0	0	0	0	0	0
France	148	229,461	158	272,839	118	206,321	116	202,768	208	370,180
Germany	24	36,755	20	31,963	39	61,474	66	117,485	77	137,068
Greece	0	0	0	0	1	1,619	0	0	0	0
Holland	11	18,207	11	16,842	11	18,054	10	17,139	23	42,765
Italy	84	150,767	48	92,733	39	83,839	40	77,598	41	86,945
Portugal	0	0	0	0	1	984	1	1,691	1	474
Russia	1	518	4	5,415	4	6,365	1	1,239	4	5,819
Spain	4	6,568	2	3,163	3	3,883	3	5,574	1	1,906
Arabia	281	73,910	223	61,495	246	72,343	249	79,755	234	71,538
China, Treaty Ports	37	63,331	20	34,433	29	60,488	28	57,452	34	69,700
Japan	0	0	1	1,555	1	1,602	23	36,173	0	0
Java	7	11,608	9	16,459	1	1,932	5	9,027	4	5,257
Maldive Islands	33	4,336	37	4,293	35	4,244	19	2,426	35	4,178
Mekran and Soniania	216	10,372	198	9,744	222	10,596	223	10,872	240	12,474
Persia	141	60,657	129	55,939	147	64,685	127	63,361	150	76,948
Russia	0	0	0	0	0	0	0	0	1	1,450
Siam	9	1,667	7	3,975	13	4,390	13	2,583	6	2,447
Sumatra	4	1,167	4	1,507	3	971	4	1,629	2	506
Turkey in Asia	75	23,271	85	32,655	96	28,526	72	26,133	106	42,378
Egypt	168	225,638	158	215,078	173	241,916	185	288,050	265	404,584
Mozambique	39	14,692	35	13,089	42	14,456	49	14,134	49	10,578
Réunion	20	11,418	24	12,676	19	9,730	27	17,273	17	9,383
Zanzibar	76	19,869	71	17,738	78	19,683	69	14,678	72	17,092
America, South and Central	31	23,030	23	23,392	43	40,984	39	44,120	54	54,465
United States	89	144,104	68	112,340	74	119,079	81	151,144	58	93,593
West Indies	6	3,438	2	2,154	3	1,584	3	2,931	2	1,138
Other Countries	23	12,827	27	4,034	27	8,755	21	7,445	19	10,306
	1,615	1,300,994	1,461	1,220,472	1,564	1,285,917	1,556	1,422,563	1,822	1,769,854
TOTAL	5,585	3,675,251	5,304	3,533,153	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276

No. 24.

VESSELS ENTERED and CLEARED, distinguishing NATIONALITIES.

	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage	No.	Tonnage.	No.	Tonnage.
	ENTERED.									
BRITISH - -	1,898	2,823,712	1,818	2,814,877	1,869	2,960,551	2,118	3,161,765	2,325	3,563,678
BRITISH INDIAN -	1,043	136,968	1,071	155,234	1,093	156,670	1,021	153,378	953	146,659
FOREIGN:										
Austrian - -	58	101,492	49	87,937	50	90,214	50	87,628	49	81,415
Danish - -	0	0	4	790	3	912	0	0	4	2,453
Dutch - -	14	12,271	2	1,900	5	4,129	18	13,610	5	4,713
French - -	44	39,557	59	51,923	64	64,490	69	62,121	70	53,973
German - -	80	86,527	52	56,147	70	93,319	90	135,976	107	165,766
Italian - -	67	98,104	76	109,224	58	91,557	50	80,822	46	85,238
Norwegian - -	30	28,212	17	13,495	34	30,616	20	19,206	45	41,624
Portuguese -	8	791	4	323	8	523	3	187	16	1,815
Russian - -	0	0	1	1,821	2	3,439	0	0	1	2,244
Turkish - -	33	6,752	35	7,487	16	4,444	10	2,646	26	4,224
Swedish - -	7	2,559	3	1,055	3	2,350	6	2,285	5	3,877
Arabian - -	338	47,612	303	41,343	343	44,068	269	35,674	283	37,470
Chinese - -	2	226	0	0	0	0	0	0	0	0
Mekranese -	22	742	27	797	26	708	32	1,077	40	983
Persian - -	3	205	3	437	5	758	0	0	2	244
Siamese - -	2	796	6	3,131	5	2,982	2	1,116	7	2,210
American - -	31	44,044	15	20,961	16	22,197	13	19,134	12	15,814
Others - -	1	333	1	333	0	0	6	2,190	3	3,881
	740	470,223	657	399,104	708	456,706	638	463,672	721	507,944
NATIVE - -	1,627	83,311	1,635	80,964	1,612	84,254	1,713	84,026	1,687	90,094
TOTAL -	5,308	3,514,214	5,181	3,450,179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375
	CLEARED.									
BRITISH - -	1,971	2,949,035	1,872	2,898,135	1,898	2,991,705	2,133	3,174,670	2,335	3,583,354
BRITISH INDIAN -	1,078	140,229	1,125	155,820	1,075	149,081	1,002	140,850	977	148,963
FOREIGN:										
Austrian - -	59	102,214	52	92,638	50	91,725	43	77,131	49	84,115
Danish - -	0	0	4	790	4	1,212	0	0	3	1,770
Dutch - -	14	12,511	2	1,092	7	6,537	18	13,610	5	4,713
French - -	47	37,735	58	51,915	57	51,914	57	48,593	60	45,800
German - -	86	95,633	49	54,118	68	87,677	77	117,689	96	143,496
Italian - -	71	108,134	75	105,582	56	85,643	50	79,054	44	82,688
Norwegian - -	34	31,699	19	15,471	34	31,261	22	22,310	40	36,577
Portuguese -	12	1,069	11	1,117	10	864	7	725	11	2,316
Russian - -	1	1,148	1	1,821	2	3,439	0	0	1	2,244
Turkish -	25	7,138	16	4,525	14	3,494	10	3,150	16	3,745
Swedish - -	9	3,746	2	590	4	2,815	5	1,777	6	4,405
Arabian - -	304	41,865	252	36,041	277	35,926	227	33,276	246	35,121
Chinese - -	2	226	0	0	0	0	0	0	0	0
Mekranese - -	24	865	27	824	26	707	29	933	44	1,189
Persian - -	3	205	2	190	4	556	1	202	4	413
Siamese - -	2	796	6	3,131	5	2,982	2	1,116	7	2,210
American -	37	53,463	17	23,889	15	21,846	14	19,257	11	15,100
Others - -	1	333	1	333	0	0	6	2,189	2	3,002
	731	498,780	594	394,067	633	428,598	568	421,012	645	468,904
NATIVE - -	1,805	87,207	1,713	85,131	1,785	88,021	1,830	85,581	1,515	81,055
TOTAL -	5,585	3,675,251	5,304	3,533,153	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276

No. 25.

Vessels built at Indian Ports.

	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Bengal:										
Chittagong: Sailing	4	567	7	814	2	374	3	510	7	1,034
Balasore „	2	75	1	21	0	0	3	26	0	0
Calcutta: Steam	0	0	0	0	0	0	0	0	1	80
Bombay:										
Bombay: Steam	1	33	0	0	2	27	3	136	0	0
Sailing	9	429	5	244	8	368	1	82	1	96
Karachi „	3	232	7	661	2	31	3	337	5	252
Other Ports „	70	1,810	65	1,462	70	1,441	42	880	43	1,014
Madras:										
Coconada: Sailing	0	0	4	400	0	0	0	0	0	0
Calicut „	5	163	2	48	4	78	2	63	5	154
Tuticorin „	1	411	3	284	0	0	0	0	0	0
Masulipatam „	3	73	4	279	2	52	1	17	4	188
Other Ports „	12	252	16	349	14	597	15	460	16	328
Burma:										
Rangoon: Steam	1	21	0	0	0	0	0	0	0	0
Moulmein „	0	0	2	190	1	25	1	32	2	96
Tavoy „	3	119	0	0	0	0	6	252	1	48
Other Ports „	1	18	2	29	1	13	0	0	1	26
Total	115	4,203	118	4,781	106	3,006	80	2,795	86	3,316

No. 26.

Vessels first registered at Indian Ports.

	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Under the English Merchant Shipping Act:										
Bengal: Steam	2	1,248	2	813	1	754	0	0	2	2,204
Sailing	0	0	1	1,061	1	339	1	517	0	0
Bombay: Steam	10	1,425	6	4,118	4	3,166	5	4,658	5	3,743
Sailing	2	1,971	1	18	2	214	0	0	0	0
Burma: Steam	1	24	2	59	0	0	0	0	0	0
Sailing	3	204	1	161	0	0	0	0	0	0
	18	4,872	13	6,230	8	4,473	6	5,175	7	5,947
Under the Indian Merchant Shipping Acts:										
Bengal: Sailing	6	220	3	69	2	63	9	303	0	0
Bombay: Steam	1	33	1	21	2	27	4	149	0	0
Sailing	105	3,385	94	3,318	94	2,492	62	2,150	83	2,491
Madras: Sailing	29	1,419	41	2,230	25	980	29	1,274	31	1,009
Burma: Sailing	6	217	37	1,408	19	556	14	954	17	613
	147	5,274	176	7,046	142	4,118	118	4,830	131	4,113
Total	165	10,146	189	13,276	150	8,591	124	10,005	138	10,060

Revenue and Statistics
Department, India Office,
14th January 1893.

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For Her Majesty's Stationery Office.

STATEMENT

OF THE

TRADE OF BRITISH INDIA

WITH

BRITISH POSSESSIONS AND FOREIGN COUNTRIES

FOR THE

FIVE YEARS

1888-89 TO 1892-93.

Presented to both Houses of Parliament by Command of Her Majesty.

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STATEMENT

OF THE

TRADE OF BRITISH INDIA

For 1892-93.

INTRODUCTION.

[NOTE.—*All values are given in this volume as "tens of rupees," a denomination which, while not subject to the charge of inaccuracy attaching to that of "£ sterling," calculated at the nominal exchange of 2s. to the rupee, nevertheless enables comparisons to be made with the figures in any past volumes in which that expression of values was employed. The sign* Rx. *is used to signify tens of rupees.*]

Below is shown in a tabular form the total trade of British India with other countries by sea, during the past five years:—

	Tens of Rupees.				
	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
Private Imports:					
Merchandise	66,570,318	66,560,121	69,034,900	66,587,457	62,605,030
Treasure	13,844,960	17,459,301	21,919,486	14,722,662	17,009,810
	80,415,278	84,019,422	90,954,386	81,310,119	79,614,840
Private Exports:					
Merchandise	96,978,171	103,396,862	100,135,722	108,036,010	106,535,997
Treasure	1,703,497	1,841,920	2,071,906	3,143,186	6,928,994
	98,681,668	105,238,782	102,207,628	111,179,196	113,464,991
Government Transactions:					
Imports — Stores	2,870,149	2,637,368	2,940,470	2,844,926	3,660,247
Imports — Treasure	0	200	15,000	0	0
Exports — Stores	71,361	63,536	91,626	137,582	59,479
Exports — Treasure	80,850	64,402	51,272	143,500	29,929
	3,022,360	2,765,506	3,098,368	3,126,008	3,749,655
Total Trade	182,119,306	192,023,710	196,260,382	195,615,323	196,829,486
Excess Exports of Merchandise (including Government Stores)	27,609,065	34,262,909	28,251,978	38,741,209	40,330,199
Excess Imports of Treasure	12,060,613	15,553,179	19,811,308	11,435,976	10,050,887
Net Excess Exports of Total Trade	15,548,452	18,709,730	8,440,670	27,305,233	30,279,312

The usual "Tables relating to the foreign sea-borne trade of British India" are appended, with a "Review of the Trade of India," by Mr. J. E. O'Conor, C.I.E., Assistant Secretary to the Government of India in the Department of Finance and Commerce.

A 78810. Wt. P. 1173.

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A. GODLEY,
Under Secretary of State.

India Office,
24th January 1894.

SECTION I.—SEA-BORNE FOREIGN TRADE.

CHAPTER I.

General Summary.

The trade of the last four years compares thus:—

	1889–90.	1890–91.	1891–92.	1892–93.
Imports.	Rx.	Rx.	Rx.	Rx.
Merchandise	66,560,121	69,034,900	66,587,457	62,605,030
Gold	5,071,027	6,500,832	4,118,929	1,781,789
Silver	12,388,274	15,418,654	10,603,733	15,228,021
Total Imports	84,019,422	90,954,386	81,310,119	79,614,840
Exports.				
Foreign merchandise re-exported	4,295,808	4,233,529	4,485,179	4,590,290
Indian merchandise	99,101,055	95,902,193	103,550,831	101,945,707
Gold	455,723	864,660	1,705,137	4,594,472
Silver	1,386,196	1,207,246	1,438,049	2,334,522
Total Exports	105,238,782	102,207,628	111,179,196	113,464,991

The total trade—imports and exports together—was—

	Rx.		Rx.
1888–89	179,096,946	1891–92	192,489,315
1889–90	189,258,204	1892–93	193,079,831
1890–91	193,162,014		

Trade has thus made no advance during the last three years. In the five years since 1888–89 the increase in trade values has been under 8 per cent., which is but a slow rate of increase.

Including Government transactions the aggregate trade of the five years was—

	Rx.		Rx.
1888–89	182,119,306	1891–92	195,615,323
1889–90	192,023,710	1892–93	196,829,486
1890–91	196,260,382		

Government transactions were large last year in the importation of ordnance stores, iron, and railway material.

A general view of our trade for the last quarter of a century gives the following features. The total value, including specie as well as merchandise and imports and exports on account of Government, was:—

	Rx.		
1. Annual average, five years ending 1871–72	102,349,797		
2. Annual average, five years ending 1876–77	102,050,970	= 0·3	per cent. decline.
3. Annual average, five years ending 1881–82	127,945,868	= 25·37	,, increase.
4. Annual average, five years ending 1886–87	156,276,284	= 22·14	,, increase.
5. Annual average, five years ending 1891–92	186,799,483	= 19·53	,, increase.

Last year's trade was but 3·3 per cent. in excess of the annual average of the preceding five years.

The trade of India has in fact been very unfavourably affected in the last three years. In 1890–91 its course was violently interrupted by a sudden and rapid rise in exchange followed by an equally sudden and rapid fall. In 1891–92 exchange fell still further and heavily, and a reaction in the import trade followed the temporary stimulus given to it by the rise in exchange in the preceding year. Trade generally was depressed, except in wheat and seeds, for which there was a large demand arising out of the failure of the Russian and other European harvests. In 1892–93 this demand no longer existed and the depression of trade continued, accompanied by a further fall in exchange so continuous and persistent as to create grave anxiety. Imports were greatly reduced in volume, merchants being reluctant to import and dealers to buy while exchange remained in such conditions that transactions might involve them in the most serious embarrassments. Exports also were restricted, by reason partly of lack of demand in Europe where trade was generally much depressed, partly of abundant supplies from other countries, and partly of more or less unfavourable harvests in India.

A large number of our staple imports declined either in quantity or value, or in both, during the year, a decline being visible in such important items as cotton yarns and piece-goods, woollen goods, apparel, copper, iron, steel, tin, zinc, railway materials, coal, salt, sugar, tea, spices, raw silk, hardware and cutlery, glassware, and paper. There were increases in beer, spirits, provisions, machinery, mineral dyes, mineral oils, manufactured silk, matches, umbrellas, and some other items; but they are of no importance in comparison with the decline in the articles mentioned above.

In the export trade the articles which declined either in quantity or in value, or in both, were: coffee, rice, wheat, other grains and pulse, provisions, sugar, tea, opium, myrabolams, castor oil, hides (raw), linseed, poppy seed, earthnuts, coir, shell and button lac.

There were, on the other hand, increases in raw cotton and cotton yarn and piece-goods, in jute and jute goods, indigo, castor, rape, and til seed, silk and wool, teak, and skins (raw). The increases in these articles, however, did not suffice to counterbalance the decline in other staples, especially in wheat, and on the whole the export trade was less by $1\frac{1}{2}$ per cent. in value than the trade of the preceding year. In 1891–92 the failure of harvests in Europe caused such an expansion of the wheat trade as to save the export trade generally from showing an appreciable decline. Last year the position was reversed, for the export trade generally would have shown an appreciable increase but for the restriction of the wheat trade within normal limits.

CHAPTER II.

Imports of Merchandise.

The values of imported merchandise since 1869–70 stand thus:—

	Exchange.	Rx.
	d.	
Annual average, 1869–70 to 1873–74	22·770	31,837,600
Annual average, 1874–75 to 1878–79	20·981	36,603,400
Annual average, 1879–80 to 1883–84	19·774	47,950,000
Annual average, 1884–85 to 1888–89	17·656	58,515,400
1889–90	16·565	66,569,120
1890–91	18·089	69,034,900
1891–92	16·733	66,587,457
1892–93	14·984	62,605,030

The value of the trade last year was nearly 6 per cent. less than in the preceding year, and was just about the same as in 1887–88, six years ago.

Taking the prices of March 1873 as = 100, the following table shows the variations in the prices of staple imports since then at Calcutta :—

——	Grey Shirtings, 8¼ lbs.	Mule Twist, Grey Yarn, Banner Mills, No. 40.	Male Twist, Turkey Red, No. 40.	Copper, Sheathing.	Iron, Flat, Bolt, &c.	Total.
March 1873	100	100	100	100	100	500
June 1874	97	92	106	95	108	498
March 1875	86	92	102	103	93	476
„ 1876	86	90	92	99	79	446
January 1877	78	90	85	92	67	412
„ 1878	73	78	87	86	60	384
„ 1879	76	75	78	80	56	365
„ 1880	81	84	75	83	73	396
„ 1881	82	82	69	81	56	370
„ 1882	78	84	69	89	71	391
„ 1883	82	74	54	80	60	350
„ 1884	75	74	62	77	62	350
„ 1885	76	72	58	64	54	324
„ 1886	84	67	57	57	50	315
„ 1887	81	62	57	65	53	318
„ 1888	79	75	59	90	61	364
„ 1889	81	75	57	98	65	376
„ 1890	76	74	57	69	79	355
„ 1891	74	70	56	71	62	333
„ 1892	74	64	57	72	64	331
„ 1893	77	74	61	80	97	389
July 1873	71	70	62	85	100	388

The following are the largest articles in the import trade. Against each is set its increase or decrease per cent. in value in the last three years :—

——	1890–91.	1891–92.	1892–93.
Apparel	— 4·0	+ 3·6	— 1·0
Coal	+17·9	—18·9	— 8·7
Cotton manufactures	+ 3·8	— 7·5	—10·6
Drugs, medicines, and narcotics	+21·7	+ 2·9	+ 1·9
Glass and glassware	+ 0·4	+11·9	— 7·8
Liquors	— 2·8	+ 1·3	+ 0·3
Machinery and millwork	—15·2	+ 2·3	+11·7
Metals	+ 0·6	+ 0·7	— 4·2
Oils	— 0·4	+ 0·06	+10·7
Provisions	— 7·5	+20	+ 5·0
Railway material	+ 9·9	—25·8	—30·5
Salt	—12·9	—19·4	— 8·1
Silk, raw and manufactured	—12·0	+20·5	— 6·5
Spices	— 4·6	— 1·9	—21·7
Sugar	—54·5	—24·6	+ 2·4
Woollen goods	+24·9	— 3·0	—13·5

In such important items as cotton manufactures, railway material, metals, woollen and silk goods, salt, coal, apparel, there was a more or less heavy decline in the year, the decline in several cases following on a reduced trade in the preceding year.

For each of the classes under which the items are grouped in the trade returns the values of the trade in the last five years are stated below in Rx. :—

——	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
1. Animals, living (mostly horses)	295,300	239,708	295,430	293,257	300,673
2. Articles of food and drink	7,469,086	7,867,666	8,628,852	8,176,797	7,950,818
3. Metals and manufactures of metals, including hardware and cutlery, machinery and millwork, and railway plant and rolling stock.	9,966,327	11,058,900	10,909,477	10,489,837	9,991,813
4. Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials.	1,195,801	1,280,334	1,397,479	1,535,216	1,615,097
5. Oils	2,072,825	2,645,213	2,634,187	2,635,955	2,919,162
6. Raw materials and unmanufactured articles.	4,115,681	3,725,259	4,032,765	3,828,052	3,604,278
7. Articles manufactured and partly manufactured.	41,455,297	39,743,039	41,136,710	39,628,342	36,223,187

Articles of Food and Drink.

Coffee.—The relatively large imports of coffee in 1891–92 were followed by an equally great reaction, the imports of the year having declined to the lowest point touched for many years.

Food Grains.—The imports of food grains also, which had been attracted by high prices in 1891–92 in unusual quantity, fell off largely, the imports of wheat returning to the normal scale.

Liquors.—The increase in malt liquor, which has been so marked since 1886, still attracts attention. Last year 3,052,894 gallons were imported, being nearly three times the average quantity imported before 1886. The bulk of the beer is imported from the United Kingdom, the imports from Germany being only 118,000 gallons, but the quantity of German and Austrian beer drunk in India is not quite accurately indicated by the place of shipment, some still being imported indirectly from Germany and Austria by way of England. Thus there were imported into the port of Calcutta alone in the year 147,000 gallons of German and Austrian beer.

The competition of Indian with imported beer does not develope. There has been no increase since 1887 in the quantity brewed which in 1892 amounted to 4,831,000 gallons. Of this 2,748,000 gallons were bought by the Commissariat for the troops. In Madras and Bombay the Government has withdrawn from the supply of beer to the army, and this withdrawal partly accounts for the increase in the quantity of beer imported.

Spirits.—While the imports of beer have increased year by year those of spirits present a strong contrast, for it may be said that these have remained stationary since 1886, the year when the increase in the imports of beer commenced. In the last ten years the imports of spirits have been—

	Gallons.		Gallons.
1883–84	894,420	1888–89	1,119,367
1884–85	857,970	1889–90	1,100,414
1885–86	936,984	1890–91	1,055,984
1886–87	1,064,386	1891–92	1,010,247
1887–88	1,084,487	1892–93	1,057,347

Of these imports about 42 per cent. (440,691 gallons) were whisky and 25 per cent. (267,665 gallons) were brandy. Gin follows next with 102,860 gallons. As a spirituous drink whisky continues to hold the field and brandy is distinctly out of favour, for genuine brandy is not easy to get except at a price which places it out of reach of most Anglo-Indians. The cheaper brandies (so-called) may be said generally to be unfit for consumption.

Not all the spirits imported are intended for consumption as potable spirit. In the quantity imported last year there were 39,110 gallons of spirit in drugs and 14,186 gallons of perfumed spirit.

Wines.—The consumption of wines continues to decline. For the last ten years the imports have been appreciably contracting, and in 1892–93 the quantity imported was smaller than it has been for fifteen years, amounting to no more than 336,000 gallons, claret and port being the favourites. Champagne and sherry are neglected, the former because few can afford it and the latter because it is no longer liked.

Provisions.—The principal specified items under provisions are dates and other dried fruits, salted fish, and ghi. A very large proportion of the imports is, however, unspecified as " other sorts," being too numerous for separate specification.

Of salted fish the bulk is brought from the Straits to Burma and so largely has the trade developed since the salt duty was increased in that province in January 1888 that it has been found necessary to impose an import duty on it equivalent to the rate of duty on salt used in the local curing of fish. Since 1888 the imports of dry salted fish have doubled, and the importation of wet salted fish (ngapi), which amounted to nearly 14,000,000 lbs. last year, is a new trade started since 1888.

The trade in dry fruits is largely confined to Western India. Of 839,682 cwt. of dates as much as 735,245 cwt. were imported into Bombay and Karachi, and of other sorts of dried fruits 81,034 cwt. out of 103,058 were received at those two ports, the dates and other sorts of fruit being shipped from the Persian Gulf.

Similar remarks apply to the trade in ghi which is shipped from the same place and the Mekran Coast.

The trade in provisions has increased in ten years from Rx. 1,033,932 to Rx. 1,862,054, an increase of 80 per cent.

Salt.—There has been a continuous decline in importations of salt since 1889–90:—

	Tons.		Tons.
1888–89 - - -	398,810	1891–92 - - -	373,953
1889–90 - - -	410,808	1892–93 - - -	360,042
1890–91 - - -	395,243		

Salt is imported almost entirely into Bengal and Burma, and the imports into these two provinces in the five years are as follow:—

——	Bengal.	Burma.	——	Bengal.	Burma.
1888–89 - -	373,204	24,460	1891–92 - -	319,469	54,162
1889–90 - -	364,004	46,506	1893–93 - -	325,101	34,665
1890–91 - -	337,526	7,452			

Although the importations have fallen off, the consumption of salt in India generally has increased during this period from year to year, the quantities which paid duty having been—

	Indian maunds.		Indian maunds.
1888–89 - - -	31,355,910	1891–92 - - -	34,451,248
1889–90 - - -	33,048,920	1892–93 - - -	35,051,391
1890–91 - - -	33,291,643		

It follows therefore that salt of Indian manufacture has been to some extent taking the place of imported salt. This displacement must be attributed to the cheapness with which Indian salt can now be placed by railway in localities hitherto more cheaply supplied notwithstanding the difference in price, with imported salt. The price of salt in India is in fact, after the duty, mainly affected by cost of transport.

The price of imported salt has been considerably reduced since the English Salt Syndicate put up the price in 1888, as will be seen from the average prices of Liverpool salt at Calcutta quoted below:—

——	Rupees per 100 Maunds.	——	Rupees per 100 Maunds.
1882–83	51·9 to 60·4	1890–91	71·2 to 81·2
1888–89	88·3 „ 102·6	1891–92	57·5 „ 69·0
1889–90	89·8 „ 98·2	1892–93	58·5 „ 65·1

Prices have, however, been run up again considerably during the present year, and at present they range from Rs. 74 to 78.

The sources of supply are as follow:—

——	1888–89.	1889–90.	1890–91.	1891–92.	1887–88.
United Kingdom - - -	337,089	285,767	273,008	222,260	241,061
Germany - - - -	7,711	45,439	60,540	103,403	47,391
Arabia - - - -	20,129	35,736	11,322	9,840	25,887
Aden - - - -	17,397	33,782	36,662	33,969	37,282
Other countries - - -	16,484	10,084	13,711	4,481	8,421
	398,810	410,803	395,243	373,953	360,042

There was a considerable decline in imports from Germany, largely due, it is said, to the dislocation of trade caused by the outbreak of cholera at Hamburg, and the reduction was not quite made up by increased imports from the United Kingdom and other countries. Liverpool salt, it is clear, has not recovered from the effects of the competition started by Germany four years ago, and now other countries are beginning to send salt to India. Last year about 6,000 tons of salt came from Suakin, where a company from Egypt is working a concession, and some quantity also was received from South America and from Asiatic Russia. The competition of South America, to which allusion was made in reviewing the trade of 1891–92 is as yet ineffective, the quantity imported being only 654 tons, and the salt is said to have met with no favour in Burma.

Spices.—Spices consist mainly of betelnuts, cloves, and pepper. Cloves are imported from Zanzibar to Bombay, whence a material proportion is re-exported to England. The trade diminishes as facilities increase for direct shipment from Zanzibar to the West, and it is reported also that the cultivation is beginning to decline with the abolition of slavery. Betelnuts are imported from the Straits and Ceylon into Bengal and Madras in large quantities to supplement local production which is insufficient for the supply of the consumers of *pán supári*, and pepper is brought from the Straits to Bengal in competition with Indian pepper produced in other provinces and in Travancore.

The importation of spices is a fairly large trade averaging about Rx. 829,000 up to last year, when it fell to Rx. 623,000. There was, in fact, a continuous, though not large, decline in each of the four years preceding 1892–93, owing to the restriction in the trade in cloves, and last year there was a heavy fall in consequence of an absence of demand for betelnuts, local production having been large.

Sugar.—The imports of sugar in 1890–91 reached the large quantity of 2,932,000 cwt. They fell in 1891–92 to 2,213,125 cwt., and there was a further fall to 1,959,818 cwt. last year. Importations in 1890–91 were no doubt stimulated by the rise in exchange, but the trade still remains very large and far in excess of the exports of Indian sugar which amounted to only 836,234 cwt. last year. It seems clear that the production in India falls short of the consumption by from fifty to a hundred thousand tons.

The imports were mostly from the following countries:—

	1890–91.	1891–92.	1892–93.
	Cwt.	Cwt.	Cwt.
From Mauritius	1,494,945	1,471,916	1,078,558
„ Germany	709,195	242,705	255,788
„ China	195,912	177,416	349,096
„ United Kingdom	281,202	30,233	21,742
„ Straits	118,944	123,761	129,606
„ Java	60,098	127,771	80,379
„ Austria	31,374	22,505	27,698
„ Belgium	25,044	—	2,107
„ France	9,356	15,409	317
„ Réunion	—	—	7,840
„ Ceylon	—	—	4,921

The supply from Mauritius fell off as a consequence of the disastrous cyclone in the island in 1892.

Tea.—The imports of tea continue on a large scale, amounting to 6,022,883 lbs., following on an import of 6,353,017 lbs. in 1891–92. From Ceylon 633,596 lbs. were received, following on an import of 849,737 lbs. in 1891–92. Ceylon took 139,084 lbs. of Indian tea last year and 36,156 lbs. in 1891–92, so that whereas we supplied Ceylon with 175,240 lbs. of our tea in two years, Ceylon sold to us 1,483,333 lbs. of her tea in the same period, being more than eight times as much.

III.—Metals and Manufactures of Metal.

Hardware and Cutlery.—The average imports of hardware and cutlery of the five years preceding 1890–91 was Rx. 986,855. In 1890–91 the value was Rx. 1,197,614, in 1891–92 Rx. 1,238,994, and last year slightly less, Rx. 1,217,754. The bulk of these goods still comes to us from the United Kingdom, but the increasing share in the trade taken by Germany, Austria, and Belgium is noticeable. From these countries the imports in 1885–86, and in the last two years, were as follows:—

	1885–86.	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.	Rx.
Germany	1,913	55,794	76,523	79,432
Austria	15,302	46,007	45,099	42,667
Belgium	20,835	28,774	49,692	61,233

These three countries have got 15 per cent. now of a trade of which they had nothing or next to nothing a few years ago. To some extent it is no doubt only a transfer, goods being sent direct which were formerly shipped through England.

Sewing machines.—A feature of some interest in the returns is the importation of sewing machines. The use of these articles has become so general that a record of the number imported has been kept since April last. In the four months, April to July, the number imported amounted to 4,439, declared value about Rx. 15,500, being under Rs. 35 each, or say 2*l.* each. These useful articles have much lightened the patient toil of the *darzi*, and they are quite a common feature now in the tailor's shop in the bazaar, to which they give a bright and civilised air, in noticeable contrast with the squalor of the surroundings.

Copper.—The price of copper advanced considerably during the year, and the comparatively large imports of 1891–92 were followed by a substantial restriction, the quantity declining from 511,088 cwt. to 420,762 cwt., a decline of nearly 18 per cent. The restriction was mainly under the head of unwrought copper, which fell to a very low point. As has been observed in previous years, the fluctuations in the trade largely depend upon the prices of copper, which, for five or six years past, have been very speculative and fluctuating. With a low range of prices stocks are greatly augmented, especially if the harvests of the country are good and the people have money for the purchase of copper and brass utensils. In the last six years the fluctuations have been great. In 1887 they amounted to 532,635 cwt., falling in the following year to 98,490 cwt., the price having been abnormally raised by the action of the copper syndicate. Since then they have been :—

	Cwt.		Cwt.
1889–90	568,915	1891–92	511,088
1890–91	446,448	1892–93	420,762

There has been a large increase in the imports of the metal from Belgium in recent years, chiefly in the form of yellow metal for sheathing. The imports have increased from 1,748 cwt. in 1888–89 to 9,373 cwt. last year. The United Kingdom, however, continues to be the chief source of supply.

Iron.—Imports were smaller than in the preceding year, and the trade can hardly be said to have developed in the last 10 years, as will be seen from the figures attached :—

	Cwt.		Cwt.
1883–84	3,543,662	1888–89	4,002,793
1884–85	3,602,276	1889–90	3,608,405
1885–86	3,493,179	1890–91	3,876,556
1886–87	3,280,389	1891–92	3,680,489
1887–88	4,321,587	1892–93	3,596,239

Galvanised iron is the only description of the metal which has really increased in the last 10 years, and of this kind the imports have more than doubled. They now exceed the imports of any other description with the exception of bar iron. For roofing, this description of iron is in great demand in India, having taken the place of tiles or other material for sheds constructed by port trusts, municipalities, railways, and mercantile firms all over the country. In the hills, private residences and shops, European and native, are universally being roofed with this material. Almost all other kinds of iron have either fallen off or remained stationary during the period mentioned, though in some cases the lack of progress is due to the substitution of steel for iron.

Steel.—The trade in steel, in fact, presents a remarkable contrast to the trade in iron.

	Cwt.		Cwt.
1883–84	253,426	1888–89	542,388
1884–85	289,928	1889–90	468,396
1885–86	278,788	1890–91	705,465
1886–87	349,317	1891–92	773,036
1887–88	420,927	1892–93	621,556

The average imports of the last five years have been about twice as large as those of the preceding five years.

The increasing proportion of the trade in iron and steel which has been taken by Belgium and Germany is very conspicuous. The statement appended shows that while, 10 years ago, the United Kingdom was in almost exclusive possession of the trade in both iron and steel, Belgium and Germany have since greatly augmented their trade with India while that of the United Kingdom has fallen away. The

importation of iron from England last year was only just double that of the other two countries, and they sent us steel in much larger quantity than we received from England.

—	From United Kingdom.		From Belgium.		From Germany.		From other Countries.	
	Iron.	Steel.	Iron.	Steel.	Iron.	Steel.	Iron.	Steel.
1883–84	3,473,619	240,149	86,657	10,981	9,411	1,609	13,976	687
1884–85	3,423,559	263,433	165,488	24,287	5,209	1,400	8,020	808
1885–86	3,322,511	255,871	152,009	20,629	4,146	1,850	14,493	438
1886–87	3,102,856	327,744	162,043	19,240	3,922	2,154	11,568	179
1887–88	4,077,292	372,824	188,584	42,913	8,148	3,283	47,563	1,907
1888–89	3,715,081	456,550	262,436	77,976	11,928	7,063	13,348	799
1889–90	2,983,080	385,916	606,544	66,375	5,425	16,099	13,356	6
1890–91	3,306,381	462,671	536,076	164,874	13,134	76,235	20,965	1,685
1891–92	2,859,753	347,816	776,328	301,573	28,559	123,086	15,849	561
1892–93	2,382,578	270,751	1,153,411	283,817	34,727	66,712	25,523	276

The imports of other metals, brass and quicksilver excepted, also declined in the year:—

—	1891–92.	1892–93.
	Cwt.	Cwt.
Brass	11,011	12,488
Lead	122,568	113,076
Quicksilver	2,506	3,206
Tin	38,830	37,603
Zinc	118,851	115,782
Others	5,713	5,164

The total value of all kinds of metals has been during the five years:—

	Rx.		Rx.
1889–89	4,054,013	1891–92	5,655,072
1889–90	5,705,987	1892–93	5,382,017
1890–91	5,646,147		

The small value in the first of these years was due to a heavy fall in the imports of copper consequent on a great rise in price. Last year the value of copper was Rx. 1,768,757, of iron Rx. 2,423,434, and of steel Rx. 385,184, these three materials representing 85 per cent. of the value of the trade in metals.

Machinery and Millwork.—There was an increase under machinery and millwork of nearly 12 per cent. in the year, following on a smaller one in the preceding year, the value being Rx. 2,359,103 against Rx. 2,111,596.

Railway Plant and Rolling Stock.—The import of railway plant and rolling stock has heavily declined from Rx. 1,484,173 to Rx. 1,032,939, which is the lowest level reached in the last 15 years.

Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Material.—The trade in chemicals, drugs, &c., continues to increase largely in consequence of the yearly augmenting import of aniline and alizarine dyes. The rapidity with which these dyes are superseding indigenous vegetable dyes is shown by the imports of the last five years:—

	(000's omitted.) Ounces.		(000's omitted). Ounces.
1888–89	52,739	1891–92	89,474
1889–90	57,682	1892–93	94,782
1890–91	61,722		

Of the quantity imported last year 84,318,000 ozs. came from the continent, mainly from Belgium. These dyes represented a value of 50 lakhs last year.

In the review of the trade of 1891–92 some remarks were made in approval of the expanding employment of these dyes which were not quite accurately interpreted by the press. The use of aniline dyes for fine Indian fabrics is much to be deprecated,

and the reference was not to these. The bulk of the dyes is used for the commoner fabrics generally worn by the people, and their substitution for the indigenous dyes in respect of such cloths is an unqualified advantage. The dyes are cheaper, they are easily applied, they are cleanly while the processes of making indigenous dyes are mostly loathsome, and the alizarine dyes which are now increasingly used have not the crudity which marked the early stages of mineral colours, and they are not so fleeting as the aniline dyes.

Oils.

Petroleum.—Imports of petroleum have more than doubled in the last six years :—

	(000s' omitted). Gallons.		(000's omitted). Gallons.
1887–88 - -	31,421	1890–91 - -	54,235
1888–89 - -	39,952	1891–92 - -	58,109
1889–90 - -	53,390	1892–93 - - -	67,086

and Russian oil appears to be completely displacing American oil :—

——	1890–91.	1891–92.	1892–93.
	Gallons.	Gallons.	Gallons.
From Russia - -	19,843,423	28,333,635	38,086,703
From United States -	32,692,946	27,293,985	26,264,630

In three years the imports of petroleum from Russia have nearly doubled, while those from the United States have fallen off heavily. Apparently the time is approaching when American oil will cease to be known in India, and indeed it is said that an arrangement has been concluded, or is under consideration, by which the American producers will retire from the Asiastic market in favour of the Russian producer, the latter retiring from the European market in favour of the American producer.

The increase of this trade in India is eminently satisfactory, for it would be difficult to overrate the civilising effect of cheap and efficient illuminants for the population. As yet, it is true, the use of this oil has hardly gone beyond the people of the larger towns, and 67 million gallons give an average consumption, in a population approximating 300 millions, of less than a quarter of a gallon per head of the population annually; but, as far as it has gone, the effects are excellent, and there is an indefinite opening for development. Undoubtedly in a few years we may very well see the trade increase tenfold, especially if the experiment of importing and transporting the oil in bulk, which is now being tried, should succeed.

Raw Materials and Unmanufactured Articles.

Coal.—The imports of coal, coke, and patent fuel do not increase :—

	Tons.		Tons.
1888–89 - -	833,478	1891–92 - -	736,971
1889–90 - -	601,670	1892–93 - -	648,185
1890–91 - -	784,664		

The bulk of the imports (83 per cent.) now goes to Bombay and Sindh. The imports into Bengal and Burma have fallen to a low level, and though Madras has taken a larger quantity than in preceding years, it is but small. The distribution of the imports is as follows (in tons) :—

——	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Bombay and Sindh - -	689,358	468,034	687,200	621,030	541,160
Burma - - -	77,878	47,800	36,599	48,085	27,814
Madras - - - -	46,866	62,666	50,818	45,044	66,380
Bengal - - -	19,376	23,170	10,047	22,812	12,831

The output of Indian coal in 1892 amounted to 2,537,696 tons, being about four times as much as the quantity imported, three-fourths being still produced in Bengal where, as will be seen from the statement printed above, the use of imported coal has

fallen to a very low point. A large quantity (885,492 tons in 1892) is used by the railways, and Bengal coal is also making its way to other provinces by sea, the coast-wise exports from Bengal being as follows :—

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93
	Tons.	Tons.	Tons.	Tons.	Tons.
To Bombay - - -	13,436	2,008	4,000	—	45,595
„ Madras - - -	2,270	2,768	29,763	52,270	60,570
„ Burma - - -	23,814	47,687	69,908	70,145	88,611
Total - -	39,520	52,463	103,671	122,415	194,776

Cotton.—There has been a further development of the feature in the cotton trade to which reference was made in the review for 1891–92, namely, the importation of long-stapled American and Egyptian cotton, the quantity of such cotton imported last year having amounted to 48,552 cwt. This quantity is insignificant in itself, but the progress made in the last few years has been rapid, and indicates the beginning of a new development in the Indian cotton-manufacturing industry. The imports of Asiatic cotton do not increase.

Silk.—Imports of silk amounted to 2,292,846 lbs., being a decline of 15 per cent. on the imports of 1891–92, but much in excess of our exports of Indian silk which amounted to only 1,820,233 lbs. The imported silk is mainly of Chinese origin, a small quantity of Japanese and Persian silk also being imported, and the bulk of it is used up in the Bombay silk mills.

Wood.—Hitherto the wood trade has been of no importance and calling for no remarks ; but it may be noted that Siamese teak was imported last year into Bombay to the extent of 2,594 tons, value for Rx. 17,361. Thus it would seem that Siamese teak is competing with Burman teak in India as well as in Europe. As regards Siamese teak, reference is invited to the remarks at page 29, on the export of Indian teak.

Wool.—A special feature in the wool trade was the import of 80,307 lbs. of wool from England, understood to be Australian wool, and of 2,105 lbs. direct from Australia. This fine long-stapled wool is used in the Indian woollen mills for the production of the superior classes of goods they are now manufacturing.

Manufactured Articles.

Cotton Yarn.—The imports of cotton twist and yarn in the last five years have been as follows :—

	Lbs.		Lbs.
1888–89 - -	52,587,000	1891–92 - -	50,404,000
1889–90 - -	46,383,000	1892 93 - -	38,276,545
1890–91 - -	50,971,000		

We must go back to the years before 1880 to find figures as low as those here recorded for 1891 -92. The decline was due to various causes, among them being the strike of the Lancashire operatives and the continuous fall in exchange, both of which operated at once to restrict the quantity available in England for export to India, and to raise the price materially. Prices were further raised by a sharp increase in the price of American cotton consequent on the announcement of a short crop. It is not clear that the increase of prices restricted consumption in India either of yarns or piece-goods, though imports were restricted, and it is certain that stocks held in India were largely reduced, dealers preferring in the conditions of the time to exhaust these before giving orders for further supplies from England. The restriction of imports has, however, been greatly prolonged, having continued into the first quarter of the present year.

Cotton Fabrics.—The influences which affected the market for yarns also affected the market for cotton piece-goods which continue to exhibit a non-progressive character. The trade in unbleached goods is smaller than it has been since 1883, and in neither white nor coloured goods is any advance apparent for many years. It must be inferred that, as suggested in the review of the trade of 1890–91, imported piece-goods are being gradually superseded by local manufactures.

	Grey (Unbleached).	White (Bleached).	Coloured, Printed, or Dyed.
	Yards.	Yards.	Yards.
1887–88	1,180,175,000	320,464,000	339,103,000
1888–89	1,347,299,000	406,492,000	372,457,000
1889–90	1,257,001,000	339,098,000	400,949,000
1890–91	1,280,540,000	373,149,000	360,335,000
1891–92	1,173,176,000	361,395,000	348,117,000
1892–93	1,092,584,000	376,359,000	339,111,000

The foregoing remarks on the stagnation of the trade in piece-goods apply also to almost all other kinds of cotton manufactures—to handkerchiefs and shawls in the piece, lace and net, canvas, and other sorts. In fact, it was an extremely bad year for the trade in cotton goods and yarns.

Values in the case of this important trade have fallen in greater proportion than quantities, as the following figures show :—

	Cotton Twist.	Cotton Goods.
	Rx.	Rx.
1887–88	3,581,906	23,924,467
1888–89	3,746,797	27,764,508
1889–90	3,482,529	26,391,398
1890–91	3,768,362	27,241,987
1891–92	3,514,619	25,174,852
1892–93	2,683,850	22,942,015

These values combined represent under 40 per cent. of the whole import trade in merchandise; in 1891–92 the proportion was 43, and 10 years previously 49½ per cent.

Silks and Woollens.—In silk piece-goods there was a further increase of about 6½ per cent. following the increase of the preceding year, but in mixed goods there was a decline. It is doubtful, however, whether an accurate record of such goods is obtained. In woollen piece-goods there was a decline of 17 per cent., but the imports of the preceding year had been unusually large.

Other Manufactured Goods.—Of the other articles enumerated in this class the following are the most important. The value of the trade in each of the last four years is here specified :—

	1889–90.	1890–91.	1891–92.	1892–3.
	Rx.	Rx.	Rx.	Rx.
Apparel, including boots and shoes	1,296,394	1,349,897	1,398,027	1,383,830
Arms and ammunition, including dynamite and other explosives.	191,591	206,331	206,517	225,775
Books and printed matter	215,027	222,401	221,594	230,564
Building materials	179,220	184,816	173,010	140,211
Cabinet-ware and furniture	99,397	91,415	113,258	96,062
Candles	135,947	111,495	126,777	148,426
Clocks and watches	104,531	129,732	140,283	115,789
Corals, real	140,194	168,716	168,112	121,045
Earthenware and porcelain	223,929	227,874	273,573	251,593
Glass and glassware	647,127	650,236	728,203	670,804
Instruments and apparatus :—				
Musical	85,588	94,165	95,772	90,188
Scientific	99,894	106,428	121,724	115,168
Jewellery and plate	83,716	94,551	90,100	93,443
Leather and leather goods, excluding boots and shoes.	184,818	170,255	191,459	179,545
Matches	239,407	282,755	331,689	358,957
Paints and colours, and painters' materials	267,366	302,861	292,858	299,517
Paper and pasteboard	407,479	431,436	470,339	436,098
Soap	111,388	92,852	110,417	116,478
Stationery	232,133	223,874	245,567	262,042
Toys and requisites for games	135,862	150,094	161,394	152,475
Umbrellas	314,106	326,092	414,942	441,145

The manufacture of paper in India is certainly beginning to affect the imports, not so much perhaps already in actually diminishing the quantity imported as in preventing its large augmentation. Considering the numbers who every year swell the totals of the reading and writing population, the yearly increasing activity in affairs, the displacement of the old order by the new under which business agreements and contracts are reduced to writing, the facilities given for travel and for communication through the post office, and the development of intellectual activity which shows itself in the multiplication of newspapers, there must be a greatly increased demand for writing and printing paper every year. It does not show itself, however, in the returns of trade to the extent that might have been expected, and this result is no doubt due to the competition of paper made in India, where there are now nine paper mills which made 26½ million pounds of paper in 1892: 10 years previously the quantity made was only 7¼ million pounds. In this connection the question may be repeated which has frequently been asked before in these reviews: Why do not the Indian paper mills make the tickets used on the Indian railway lines? The 127½ million passengers carried on those lines in 1892 used up a number of tickets the manufacture of which would probably keep a mill running for not far from half a year.

The list appended states in the order of their importance the principal articles of merchandise imported into India:—

—	1889–90.	1890–91.	1891–92.	1892–3.
	Rx.	Rx.	Rx.	Rx.
Cotton goods and yarn	29,873,928	31,010,349	28,689,471	25,625,865
Metals, including hardware and cutlery	6,802,177	6,843,762	6,894,067	6,599,772
Oils, chiefly mineral	2,645,213	2,634,187	2,635,955	2,919,162
Silk, raw and manufactured	2,845,159	2,501,430	3,014,698	2,817,651
Sugar	2,200,049	3,399,886	2,561,996	2,625,683
Machinery and millwork	2,435,385	2,063,863	2,111,596	2,359,103
Provisions	1,596,565	1,476,070	1,771,793	1,862,054
Chemicals, drugs and medicines, dyes, &c.	1,280,334	1,397,479	1,535,216	1,615,097
Woollen goods	1,455,225	1,818,213	1,762,031	1,523,242
Liquors	1,465,144	1,423,460	1,442,095	1,447,263
Apparel	1,296,394	1,349,898	1,398,027	1,383,830
Coal	1,308,590	1,543,442	1,250,493	1,141,450
Railway material	1,821,337	2,001,853	1,484,173	1,032,939
Glass and glassware	647,127	650,236	728,203	670,804
Spices	852,350	813,115	797,196	623,633
Salt	894,532	779,034	627,953	576,694
Umbrellas	314,106	326,092	414,942	441,145
Paper and pasteboard	407,479	431,436	470,339	436,098

The two first items comprised nearly 55 per cent. of the whole value of imports in 1890–91, about 53½ per cent. in 1891–92, and about 51½ per cent. last year.

CHAPTER III.

Exports of Merchandise.

I.—*Exports of Foreign Merchandise.*

The figures of the trade show a gradual but small increase:—

	Rx.		Rx.
1888–89	4,335,437	1891–92	4,485,179
1889–90	4,295,808	1892–93	4,590,290
1890–91	4,233,520		

The following are the main items of the re-export trade, with their values:—

—	1889–90.	1890–91.	1891–92.	1892–93.
Articles of food and drink:	Rx.	Rx.	Rx.	Rx.
Provisions	137,611	131,301	117,552	146,264
Spices	116,779	68,753	30,179	30,414
Sugar (refined)	267,609	197,659	192,628	328,080
Tea	167,838	285,060	315,741	328,151

—	1889–90.	1890–91.	1891–92.	1892–93.
Metals and metalware:	Rx.	Rx.	Rx.	Rx.
Hardware and cutlery	47,541	52,651	69,583	70,824
Copper	83,614	66,943	105,760	133,338
Iron	105,726	66,018	82,884	107,484
Chemicals, drugs, &c.	57,875	57,865	67,881	76,682
Raw materials:				
Gums and resins	73,611	60,922	68,785	67,208
Ivory (unmanufactured)	125,543	149,457	150,468	111,144
Silk	33,951	40,024	37,498	37,225
Wool	693,527	624,681	630,839	597,718
Manufactured goods:				
Cotton twist and yarn	91,382	83,801	113,665	90,822
Cotton manufactures, piece-goods, &c.	1,728,358	1,710,493	1,817,165	1,732,878
Silk manufactures	57,758	64,677	66,982	71,764
Woollen manufactures	50,349	65,120	78,302	58,549
Apparel	103,457	102,503	100,038	118,608
Glassware	32,024	34,317	41,499	43,455

Cotton manufactures, including yarn, form about 39 per cent. of the whole trade, and with wool, sugar, and tea, which are the only other large items, constitute over two-thirds of the trade.

The export of foreign (mainly China and Java) tea was slightly in excess of the trade in 1891–92, the quantity exported in each of these years being respectively 3,368,000 lbs. and 3,409,000 lbs., the bulk of the exports being to Persia. The export of Indian tea to the same country in the year was only 1,407,000 lbs.

The countries with which the trade is chiefly carried on are stated below:—

—	1889–90.	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.	Rx.
Persia	1,225,603	1,319,957	1,418,522	1,391,184
United Kingdom	1,178,757	1,063,392	1,094,027	1,044,100
East Coast of Africa, Zanzibar, and Mozambique	372,627	390,864	351,860	381,735
Arabia	222,214	243,255	303,486	315,740
Straits	271,830	259,772	246,399	308,624
Turkish Arabia	253,424	237,638	314,211	288,179
Aden	132,025	148,834	146,480	179,158
China	135,244	144,462	111,617	151,194
Mauritius	110,901	75,889	102,605	143,719
Ceylon	118,986	142,547	155,880	137,885

But a small fraction of the trade is carried on elsewhere in India than at Bombay and Karachi, the trade from these places being over 92 per cent. of the whole.

II.—*Exports of Indian Merchandise.*

The figures for the last ten years are as follow:—

—	—	Increase or Decrease.	—	—	Increase or Decrease.
	Rx.	Per cent.		Rx.	Per cent.
1883–84	85,085,720	+ 5·5	1888–89	92,642,735	+ 7·2
1884–85	80,313,208	− 5·6	1889–90	99,101,055	+ 7·0
1885–86	80,734,731	+ 0·5	1890–91	95,902,193	− 3·2
1886–87	84,908,994	+ 5·2	1891–92	103,550,831	+ 7·9
1887–88	86,370,022	+ 1·7	1892–93	101,945,706	− 1·5

The trade of 1889–90 increased mainly as the result of a greatly augmented value of seeds, jute, and cotton. In the case of seeds and jute the increase was due to higher prices.

In 1890–91 these three articles gave greatly reduced values, the result in the case of cotton and seeds of a smaller quantity exported, and, in the case of jute, of a heavy fall in price accompanied by an increase in the quantity exported. The reduction in the value of these three articles amounted to nearly Rx. 4½ millions; the total reduction in the export trade being not quite Rx. 3,200,000. Of articles of the first importance only grain and pulse and cotton yarns and cloths gave improved results.

In 1891–92 the exports of cotton again fell off to an exceptionally low level, as the result of a very bad crop. The exports of jute also for the same reason fell to a lower point than had been known for six years, and, for the first time in the history of the trade, cotton yarns and cloth declined materially. There was also a decline in some minor articles. Compensating for this decline there was a considerable trade in seeds and an abnormally large trade was done in food-grains in consequence of the failure of the harvest in Russia and bad crops in other countries of Continental Europe, following a very severe winter. This trade in food-grains saved the trade of the year from showing a material decline.

In 1892–93 the position was in many respects reversed. Cotton, cotton yarns and piece-goods, jute and jute manufactures, gave greatly improved results. There was also an increased trade in indigo and a number of other articles, while coffee and tea showed larger values, the result of higher prices, for the quantity exported declined. On the other hand, so great was the decline in the export of wheat, rice, and other food-stuffs, some other articles also having fallen off, that the increase was more than counterbalanced, with the result that the total export trade was $1\frac{1}{2}$ per cent. smaller than in 1891–92.

In the following list the principal articles in the trade and their values for the last four years are shown (in Rx.):—

	1889–90.	1890–91.	1891–92.	1892–93.
1. Grain and pulse	16,528,225	19,539,297	28,695,680	20,562,972
2. Cotton, raw	18,668,404	16,502,775	10,754,311	12,743,679
3. Seeds	10,627,553	9,343,252	12,208,457	11,631,015
4. Opium	10,115,936	9,261,814	9,562,261	9,255,013
5. Cotton yarns and cloth	6,753,743	7,702,639	7,035,036	8,100,658
6. Jute, raw	8,639,861	7,602,010	6,848,493	7,944,223
7. Tea	5,277,649	5,219,233	5,963,129	6,292,348
8. Hides and skins	4,524,260	4,695,919	5,186,002	5,591,934
9. Indigo	3,863,083	3,073,125	3,214,076	4,141,179
10. Jute manufactures	2,791,242	2,481,961	2,513,100	3,237,993
11. Coffee	1,489,872	1,454,985	1,998,659	2,066,862
12. Wool, raw	1,085,637	968,322	1,013,864	1,116,578
13. Dyes (other than indigo)	683,288	573,640	764,709	802,013
14. Lac	488,513	781,443	751,224	784,950
15. Provisions	624,424	633,377	776,531	775,802
16. Wood and timber	870,119	557,884	609,463	695,259
17. Silk, raw	639,818	521,069	518,627	617,574
18. Oils	543,945	551,902	583,810	595,568
19. Sugar	917,179	417,562	508,417	597,914

Below the principal articles are arranged in parallel columns, those which increased in value to the left, and those which decreased to the right:—

	Increases.		Decreases.
	Per cent.		Per cent.
Cotton	18·5	Grain and pulse	28·3
Cotton yarns and goods	15·1	Opium	3·2
Coffee	3·4	Provisions	0·09
Indigo	28·8	Seeds	4·7
Other dyes	4·8	Sugar	0·9
Hides and skins	7·8		
Jute	16		
Jute manufactures	28·8		
Oils	2		
Lac	4·4		
Tea	5·4		
Silk, raw	15		
Wood and timber	14		
Wool	10·1		

It will be seen that there was an increased value in many of the most important staples of the export trade, and that several articles in which a decline was seen in 1891–92 did well last year. On the other side comparatively few articles have decreased, and in only one case is the decrease very considerable. Yet in that case the trade is so large, and the decrease was so great, that the whole of the increases were more than counterbalanced. The decline in the value of the whole export trade was Rx 1,605,124 only, although the decline in the value of grain and pulse alone

was as much as Rx. 8,132,708. It is evident therefore, that, but for this heavy decline in the grain trade, the export values of the year would have been appreciably larger than those of 1891–92.

The following is a statement of the prices of the principal articles of Indian export, the prices in 1873 being taken to represent 100 :—

	Cotton, Broach.	Cotton Yarns, 20s.	Rice Monghy.	Wheat No. 1, Soft White.	Opium (Bengal).	Indigo, Good.	Jute, Picked.	Gunny Bags.	Linseed, Fine, Bold Clean.	Tea.	Total.
March 1873 -	100	100	100	100	100	100	100	100	100	100	1,000
January 1874	88	100	150	75	105	114	153	88	115	123	1,111
„ 1875	80	81	128	80	96	109	126	111	108	123	1,042
„ 1876	85	80	111	84	96	91	141	84	90	136	998
„ 1877	87	90	150	93	97	110	150	95	102	148	1,122
„ 1878	84	80	155	119	97	88	153	101	106	135	1,118
„ 1879	78	74	189	116	87	114	153	99	109	129	1,148
„ 1880	98	81	136	115	94	112	169	89	113	126	1,133
„ 1881	95	85	89	96	109	105	156	111	104	135	1,085
„ 1882	90	80	83	97	102	117	137	118	91	126	1,041
„ 1883	78	74	101	87	91	107	96	98	85	110	927
„ 1884	85	74	142	86	93	117	162	106	96	116	1,077
„ 1885	90	72	142	74	99	103	110	94	98	90	972
„ 1886	81	72	130	80	93	107	137	85	101	96	982
„ 1887	85	69	103	89	83	70	137	98	101	77	912
„ 1888	95	74	110	86	80	82	153	125	95	84	984
„ 1889	93	79	131	95	94	93	192	126	112	77	1,092
„ 1890	95	74	144	84	86	76	197	118	109	63	1,046
„ 1891	84	70	147	87	79	86	126	93	97	81	950
„ 1892	75	65	162	103	80	74	236	132	112	71	1,110
„ 1893	107	78	189	95	97	114	192	119	128	87	1,206

Grouping the items as in the trade returns, the values of the trade in each group for each of the last five years are as follows in Rx. :—

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
1. Animals, living - - - -	112,146	98,085	122,278	101,878	137,307
2. Articles of food and drink - -	24,841,910	25,354,123	27,785,219	38,456,954	30,810,947
3. Metals and manufactures of metal -	53,523	63,273	61,144	77,018	84,406
4. Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials.	15,585,461	14,990,805	13,283,220	13,872,431	14,575,150
5. Oils - - - - -	430,306	543,945	551,903	583,810	595,568
6. Raw materials and unmanufactured articles.	38,509,911	44,291,911	39,497,900	36,179,292	39,317,571
7. Articles manufactured and partly unmanufactured.	13,109,477	13,758,912	14,600,528	14,279,446	16,424,756

The largest class is that of raw materials, which constitute 38·5 per cent. of the whole trade. Articles of food and drink, which in 1891–92 comprised 37 per cent. of the trade, last year only comprised 30 per cent., owing to the restriction of the exports of wheat to their normal dimensions. A very satisfactory feature is the increase of the class of manufactured articles which formed over 16 per cent. of the whole exports, having been under 14 per cent. in 1891–92. The class of chemicals, drugs, dyes, and narcotics constituted 14·3 per cent. of the trade. These four classes form 99 per cent. of the export trade.

Articles of Food and Drink.

Coffee.—The exports of coffee have been as follows :—

	Cwt.	Rx.
1886–87 - - -	370,458	1,502,251
1887–88 - -	273,775	1,529,680
1888–89 - -	365,299	1,884,243
1889–90 - -	239,795	1,489,872
1890–91 - -	233,451	1,454,985
1891–92 - -	311,864	1,998,659
1892–93 - - -	296,687	2,066,862

Prices have ruled very high for three consecutive years now, the combined effect of restricted supplies in the European market and speculation in the prospects of Brazilian coffee; but the scale on which exports are made from India continues and is likely to continue low. In the five years ending 1882–83 the average annual export was 353,909 cwt.; in the five years ending 1892–93 it was only 289,419 cwt. Indian coffee in fact only supplements the supply received from other countries, notably Brazil, and the demand for it is limited. The coffee tree in India moreover has had to struggle with pertinacious and destroying enemies in the borer and the leaf disease, and, as in Ceylon, considerable areas of coffee land have been planted with tea.

Rice.—The total exports of rice from each province last year and in each of the nine preceding years are given below :—

Exports of Rice (husked) in Cwt. (000's *omitted*).

——	Burma.	Bengal.	Madras.	Bombay.	Sindh.	Total for India.	Value Rx.
1883–84	16,994	7,394	1,843	521	80	26,832	8,328,879
1884–85	13,507	6,035	1,403	677	80	21,702	7,122,787
1885–86	19,084	6,879	1,181	521	149	27,814	9,167,189
1886–87	18,216	5,902	1,564	639	139	26,460	8,764,809
1887–88	17,879	7,996	1,438	764	72	28,149	9,225,109
1888–89	14,205	6,417	1,538	589	19	22,768	7,845,350
1889–90	18,259	5,992	1,654	799	70	26,774	10,047,331
1890–91	24,581	7,928	1,210	646	109	34,474	12,773,628
1891–92	22,676	8,354	1,018	598	94	32,740	13,296,792
1892–93	18,339	7,201	1,002	716	137	27,395	12,259,526

The countries to which Indian rice was exported in the last three years are these :—

——	Cwt. (000's omitted).			
	1889–90.	1890–91.	1891–92.	1892–93.
EUROPE :				
United Kingdom	5,177	4,299	5,135	5,346
Malta	953	2,317	1,640	200
France	207	134	47	41
Egypt	7,398	9,700	10,874	7,931
Germany	176	310	544	510
Other countries	66	49	7	57
Total	13,977	16,809	18,247	14,085
ASIA :				
Ceylon	3,270	3,711	4,145	4,104
Straits	3,916	6,451	4,180	2,921
Arabia and Aden	1,191	1,240	892	1,226
Persia and other countries	346	1,632	412	369
Total	8,723	13,034	9,629	8,620
AFRICA :				
Mauritius, Réunion, and Eastern Coast	2,014	2,328	2,072	1,845
Cape Colony and Natal	256	258	270	227
Total	2,270	2,586	2,342	2,072
AMERICA :				
West Indies	269	329	539	271
South America	1,426	1,493	1,796	2,166
Canada	53	75	73	118
United States	Nil	71	63	24
Total	1,748	1,968	2,471	2,579
AUSTRALIA	56	77	47	39

The quantity exported was much less than in either of the two preceding years, in which, however, the exports were exceptionally and abnormally large, and was but little in excess of the trade of 1889-90. There was a heavy decline in shipments to the Straits, where the demand was largely supplied from the surplus of Cochin-China.

The shipments to Malta and Egypt also fell away very largely. Such shipments are all "for orders" for a Continental port, and on the Continent trade was dull and depressed owing, *inter alia*, to the presence of cholera in Hamburg, which is one of the ports to which Indian rice goes in quantity for distillation. Moreover, in 1891–92 rice was in more extensive demand than usual on the Continent in consequence of the failure of rye and other grains with which it enters into competition for distillation, and with the return of good harvests this demand declined. The reduction of the exports to France is due to a new protective fiscal arrangement under which, while Indian rice is charged with duty, rice from French Cochin-China is admitted free of duty.

Prices also in Burma were kept above the level of the European market by a local demand for Upper Burma and for India. The exports from Burma to India were exceptionally large in consequence of the scarcity in Southern India, and more than two million cwt. were shipped to Madras in the year compared with 790,000 cwt. in 1891–92. In the present year Burman rice is being shipped in large quantity to Bengal, a province where hitherto it has been but little used. But there is little doubt that consumption is fast overtaking production in Bengal, and that that province is beginning to depend on imported food supplies to supplement local production.

Wheat.—The subjoined table gives the exports of wheat from India for each of the last 12 years :—

	From Bengal.	From Bombay.	From Sindh.	From Burma and Madras.	Total Exports.	Total Value.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Rx.
1881–82	6,668,047	11,328,585	1,852,334	14,554	19,863,520	8,604,081
1882–83	4,439,405	6,957,752	2,732,275	14,975	14,144,407	6,068,934
1883–84	7,611,535	8,970,603	4,372,832	1,525	20,956,495	8,877,561
1884–85	2,563,204	8,993,108	4,270,860	3,582	15,830,754	8,309,140
1885–86	4,189,672	10,608,680	6,241,017	21,150	21,060,519	8,002,350
1886–87	7,037,957	12,606,144	2,613,748	5,471	22,163,320	8,625,864
1887–88	4,334,768	8,541,621	660,758	1,022	13,638,169	5,562,373
1888–89	2,950,985	10,654,163	4,004,039	894	17,610,081	7,522,676
1889–90	1,550,839	5,146,881	7,100,282	1,222	13,799,224	5,791,377
1890–91	1,340,355	6,212,143	6,767,300	698	14,320,496	6,042,426
1891–92	4,746,938	14,430,808	11,125,000	679	30,303,425	14,380,462
1892–93	3,325,063	8,174,360	3,472,824	206	14,973,453	7,440,383

Excluding the abnormal year 1891–92 the average annual exports have been about 795,000 tons since 1881–82, in which year the trade may be said to have taken its full development. Last year the exports were about 749,000 tons. The decline in the exports from Kárachi was very great, the harvests of the Punjab having been not up to the average; but from Bombay and Calcutta also exports fell off considerably, though supplies were abundant if they had been required in Europe. For the first three months of the year, April, May, and June, the months following the harvest, the shipments were fairly large, but they then fell off rapidly and have remained low up to the present. Indian wheat was, in fact, in small demand from Europe, where the harvests were much better than they had been in 1891. In that year the *Economist*, in a leading article on the position of wheat, warned the public that the consumption of the world had overtaken production, and that a permanently higher range of prices must be looked for. Prices were indeed at the time rising rapidly in consequence of the anticipated failure of crops in Europe, but the United States had a harvest of unparalleled dimensions, and in a very few months prices began to fall as rapidly as they had risen, and continued falling. The United States had a second crop of great magnitude, and prices fell still further until they reached the lowest point on record. Meanwhile prices in India were somewhat high and exports were not profitable. The trade has continued on a low scale since the close of the year, and it is unlikely to exceed what experience has shown to be an average export, say from 700,000 to 800,000 tons, for, though the European harvest is below the average, supplies from the United States are abundant.

The exports of the two years were directed as follows (cwt., 000's omitted) :—

——	1891–92.	1892–93.
To the United Kingdom	12,345	7,413
„ France	6,024	1,724
„ Egypt	4,858	2,045
„ Belgium	4,655	1,226
„ Italy	1,062	689
„ Germany	663	902
„ Holland	523	386
„ Spain, including Gibraltar	—	399

The rest went in trifling quantities to other countries, but a noticeable feature in the returns is the shipment of 10,000 cwt. to South America.

Wheat-flour.—With the exports of wheat in 1891–92, the exports of wheat-flour also largely increased, and though not so large in 1892–93 they were still on an extensive scale.

	Lbs. (000's omitted)		Lbs. (000's omitted)
1887–88	36,082	1890–91	47,036
1888–89	36,290	1891–92	61,028
1889–90	48,572	1892–93	57,940

In 1891–92 a good deal was sent to Europe and Egypt, about 7,300,000 lbs. altogether, the bulk of it being taken by Belgium; but last year the demand for Europe practically ceased, having evidently been merely temporary, the consequence of high prices and short supplies. The exports to Europe, mainly Belgium and Egypt, were only 3,240,000 lbs., and the bulk of the flour was taken as usual to Mauritius, Aden and Arabia, the East African coast, Ceylon, and other places in the East.

Other Grains.—The demand in Europe in 1891–92 for wheat, wheat-flour, and rice was accompanied by a demand for other grains also, especially jawár and bájra. The export of these last-named millets in the last five years have been as follows (in cwts.) :—

1888–89	611,960	1891–92	1,572,882
1889–90	932,572	1892–93	920,366
1890–91	1,095,952		

Jawár and Bájra.—The demand for the jawár and bájra millets arose out of the scarcity and high prices of the inferior grains used for distillation, consequent on the Russian scarcity and prohibition of the export of rye. With maize, potatoes, rye, and oats costing high prices, these articles were too dear for distillation, and were used for human food, attention being turned to jawár and bájra as substitutes for distillation. For this purpose it is said that they were not a success, maize being more profitable even at a difference in price of two or three francs per kilogramme, and the exports last year fell away greatly, very little having been shipped to Europe. Most of the quantity exported was taken to Abyssinia and to the Arabian coast and Aden.

Provisions.—Exports of provisions have largely expanded in recent years, owing in great measure to the development in the trade in flour mentioned above, the value of this item forming not much less than half the aggregate value of the whole group. The other principal items are fishmaws and sharkfins, salted fish, dried fruits, and ghi. The trade is conducted mainly with Asiatic countries and the east coast of Africa.

Sugar.—The subjoined figures show the trade in sugar during the last ten years :—

——	Refined.	Raw.	——	Refined.	Raw.
	Cwt.	Cwt.		Cwt.	Cwt.
1883–84	203,693	1,426,827	1888–89	34,523	978,955
1884–85	55,323	1,015,596	1889–90	111,323	1,309,321
1885–86	24,942	1,142,598	1890–91	28,768	795,973
1886–87	33,340	953,066	1891–92	37,044	940,574
1887–88	37,723	1,008,565	1892–93	37,461	798,773

It is clear that the export trade in Indian sugar is struggling for existence. The production of the country is indeed not sufficient for local consumption, and the quantity imported to supplement local supplies is more than double the quantity exported. Madras is practically the only province which can still carry on anything like an extensive export trade in sugar.

Tea.—The exports of tea amounted to 114,722,447 lbs., which was, contrary to anticipations, about 4½ per cent. less than the quantity exported in the preceding year. The crop was materially below the estimates. It is the first time in the history of the trade that the exports have not been in excess of those of the previous year.

The exports of the last ten years are given below :—

—	Lbs. (000's omitted.)	Rx.	—	Lbs. (000's omitted.)	Rx.
1883–84	59,912	4,083,880	1888–89	97,011	5,267,315
1884–85	64,162	4,044,759	1889–90	103,760	5,277,650
1885–86	68,784	4,306,133	1890–91	107,015	5,219,233
1886–87	78,703	4,727,992	1891–92	120,149	5,968,129
1887–88	87,514	5,174,440	1892–93	114,722	6,292,348

But though the quantity exported was smaller, the quality generally was well over the average, and the prices obtained were high and all the more satisfactory that they followed three years in which prices had been steadily falling. The average prices realised at the auction sales in Calcutta during the last five years were as follow, in annas and pie per pound :—

—	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Orange (and broken orange) Pekoe	12·4	11·8	11·2¾	11·1	13·0⅝
Broken Pekoe	10·3	9·9	8·10¾	8·7⅓	11·3⅓
Pekoe	8·1	7·5	7·2	7·0⅓	8·9
Pekoe Souchong	6·3	5·7	5·8¼	5·3⅓	6·5¼
Broken do.	5·10	5·0	5·3½	4·9¾	5·10⅝
Pekoe fannings	6·6	5·7	5·10	5·3½	6·7⅕
Other low class	4·11	4·8	5·2	4·2½	5·0⅓

Of 478,326¼ chests sold last year in Calcutta, the finer kinds (orange and flowery pekoe and broken orange, and flowery pekoe) were represented by 135,068 chests, being about 28 per cent. Pekoe and pekoe souchong were represented by 150,108 chests and 120,355 chests respectively.

The exports are in lbs. (000's omitted) :—

—	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
United Kingdom	93,222	98,731	100,209	111,169	108,513
Australia	2,880	3,419	5,119	5,204	3,908
Persian Gulf	467	1,200	1,311	3,129	1,407
United States	155	103	79	83	50
Canada	14	85	61	102	39
China	19	33	61	51	72

The range of prices made the year a very satisfactory one for planters although the quantity exported diminished.

The following are the imports from India, Ceylon, and China into England in the last nine years (quantity stated in lbs., 000's omitted) :—

—	From India.	From Ceylon.	From China.	—	From India.	From Ceylon.	From China.
1884	63,208	2,211	143,771	1889	95,584	32,673	88,558
1885	64,382	4,242	139,673	1890	101,771	42,491	73,743
1886	73,467	7,144	145,308	1891	109,638	61,900	62,284
1887	84,645	13,062	119,799	1892	111,711	66,042	57,051
1888	89,874	22,509	105,735				

From India and Ceylon were imported last year more than three times as much tea as was imported from China. The Chinese trade has been moving steadily and rapidly on the down grade since 1886. As there has been considerable misapprehension expressed as to the reasons why India and Ceylon have been able to drive China out of the English field, it may be as well to observe that the determining cause is certainly not the cheapness of price of Indian tea. On the average the price of Indian tea is materially higher in London than that of China tea, as is evident from the declared value per pound as entered in the returns of the Board of Trade. These are subjoined:—

——	Imported from		Difference per cent. against India.	——	Imported from		Difference per cent. against India.
	India.	China.			India.	China.	
	d.	*d.*			*d.*	*d.*	
1883	15·0	11·4	24·0	1888	11·8	9·8	17·0
1884	14·1	10.6	24·8	1889	11·5	9·5	17·4
1885	13·9	11·0	20·8	1890	11·2	9·2	17·8
1886	13·7	10·5	23·3	1891	11·0	9·3	15·5
1887	11·9	9·3	21·8	1892	10·3	8·7	15·5

It will be seen that at the lowest point the average value of Indian tea is 15½ per cent. higher than that of China tea. Notwithstanding this difference, however, the English consumer prefers Indian tea which he and she find to be on the whole more economical, though costing more on purchase, and more palatable than the trash received from China. During the last few years the Chinese have had to send a better class of teas to England to retain a hold of the market, but they cannot afford to sell their better teas at the prices ruling, and unless and until they can obtain all the advantages of the Indian and Ceylon planter and relieve themselves of their own positive disadvantages, they will find it impossible to compete with India and Ceylon.

Opium.—The exports of opium were:—

——	Chests.	Rx.	Average Value. Rs.	——	Chests.	Rx.	Average Value. Rs.
1882–83	91,798	11,481,376	1,251	1888–89	87,789	10,508,081	1,197
1883–84	91,963	11,294,460	1,228	1889–90	85,166	10,115,936	1,188
1884–85	86,578	10,882,606	1,257	1890–91	85,753	9,261,814	1,080
1885–86	87,956	10,735,518	1,220	1891–92	87,558	9,562,261	1,092
1886–87	95,839	11,077,669	1,155	1892–93	75,384	9,255,014	1,228
1887–88	90,096	10,067,764	1,117				

The price of Bengal opium rose rapidly in the beginning of the year, but it has since fallen heavily with the fall in exchange with China. The price of Malwa opium also slightly improved.

——	1889–90.	1890–91.	1891–92.	1892–93.
	Chests.	Chests.	Chests.	Chests.
Exported from Bengal - -	55,985	57,597	56,773	48,149
Do. Bombay -	29,181	28,156	30,785	27,235

Average price—

——	Bengal.	Bombay.
	Rs.	Rs.
1889–90	1,138	1,282
1890–91	1,038	1,165
1891–92	1,059	1,152
1892–93	1,243	1,200

The exports were thus distributed (in chests). :—

—	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
	Chests.	Chests.	Chests.	Chests.	Chests.	Chests.
China: Hong Kong -	59,508	56,166	54,272	52,566	50,523	37,981
„ Treaty Ports -	17,307	16,725	15,830	18,289	20,282	21,790
Straits - -	12,368	13,995	13,749	13,915	15,035	12,609
Cochin-China -	670	725	1,050	480	880	2,170
Other countries -	243	178	265	503	838	834

Indigo.—The exports of indigo during the last ten years were as follow :—

—	Cwt.	Rx.	—	Cwt.	Rx.
1883–84	168,590	4,640,991	1888–89	142,447	3,948,594
1884–85	154,629	4,068,500	1889–90	157,116	3,863,084
1885–86	132,495	3,783,160	1890–91	118,425	3,073,125
1886–87	138,396	3,691,677	1891–92	125,327	3,214,076
1887–88	139,644	3,890,649	1892–93	126,703	4,141,179

In the cultivation of this most precarious and uncertain plant Bengal again had an extremely bad season. Madras did better, having recovered from the effects of the drought which prevailed for two years in succession, and there was a comparatively large export from Bombay and Sindh, so that on the whole the exports were slightly larger than in 1891–92. The exports from Bengal and Madras were as follow :—

—	Bengal.	Madras.
1889–90 - - - -	91,835	53,889
1890–91 - - - -	69,519	40,696
1891–92 - - - -	98,075	19,718
1892–93 - - -	61,637	47,116

Prices ranged high in the year compared with the low point to which they fell in 1892, a compensation to the Bengal planter for the restricted quantity he was able to export. The total value of the 61,637 cwt. exported from Calcutta last year was Rx. 2,600,446, which was hardly less than the Rx. 2,636,039 at which the 98,075 cwt. exported in 1891–92 were valued. The average value per cwt. which, in 1891–92, was about Rs. 269, was in 1892–93 Rs. 422.

Two or three years ago it was noted in one of these reviews that printed cotton blouses were displacing among the peasantry of Persia the indigo-dyed blouses that had been in constant use, and it is now reported that the fellahin of Egypt are substituting blouses imported ready dyed with alizarine colours for the blouses dyed in the country with indigo.

Other Dyes.—The other dyeing and tanning stuffs are of small importance compared with indigo. The trade in them for the last two years has been as follows :—

—	1891–92.		1892–93.	
	Cwt.	Rx.	Cwt.	Rx.
Cutch - - -	197,059	317,296	229,316	382,484
Myrabolams - - -	790,802	393,690	667,549	336,709
Turmeric - - -	42,391	45,476	59,907	71,272

Raw Materials and Unmanufactured Articles.

Cotton.—The exports of raw cotton during the last 12 years have been as follows (in cwt., 000's omitted) :—

	Cwt.	Rx.		Cwt.	Rx.
1881–82	5,627	14,935,959	1887–88	5,374	14,412,842
1882–83	6,168	16,049,017	1888–89	5,331	15,045,647
1883–84	5,979	14,383,728	1889–90	6,320	18,668,404
1884–85	5,066	13,286,367	1890–91	5,914	16,502,775
1885–86	4,190	10,777,204	1891–92	4,425	10,754,311
1886–87	5,433	13,468,429	1892–93	4,789	12,743,679

Not much can be said for the trade of the year in this important staple except that it was better than that of the preceding year. That year, however, was one of the worst yet known in the trade as regards the quantity of the crop and the prices ruling. In both respects there was some recovery last year, especially after it was announced that the American cotton crop would be deficient.

The exports in the last five years have been directed to the countries named below :—

	Cwt. (000's omitted).					
	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
United Kingdom	2,140	1,776	2,166	1,520	710	528
Italy	774	781	957	823	588	709
Austria	688	755	741	719	548	594
Belgium	676	873	941	907	670	684
France	487	549	635	688	509	537
Germany	139	190	486	810	745	915
Russia	134	150	94	82	53	204
Spain	45	72	72	115	61	89
Other Continental countries	37	9	7	11	12	61
China	202	139	125	119	110	46
Japan	—	—	61	78	401	444

The exports to the Continent formed about 80 per cent. of the whole exports, the quantity sent to England being only about 11 per cent. of the whole, and of this 11 per cent. rather more than half is re-exported from England to the Continent. The English spinners in fact refuse to take more than between 5 and 6 per cent. of the cotton we have available for export, preferring American, Egyptian, and other cotton.

There are only two in the foregoing list of countries to which attention need be drawn. Unless the increasing cultivation of cotton in Central Asia should interfere, Russia may become a considerable consumer of our cotton, the development of the trade in petroleum from Russia to India having facilitated the development of return freights of cotton and other merchandise. The increase in the export to Japan indicates the extent to which that enterprising country is spinning cotton by machinery. The British Consul at Yokohama, reporting on the trade of 1892, mentions that, according to an official return published in November of that year, there were 37 spinning mills in Japan with 447,376 spindles, and the British Consul at Hiogo says the number will be augmented by 100,000 in 1893. The consequence of this development to India has been the restriction of the Japanese demand for our yarn and an enormously increased demand for our raw cotton.

The centre of this important trade, both as regards manufacture and exportation of the raw material, is in Bombay, whence 80 per cent. of the exports were made in each of the last two years :—

	Cwt. (000's omitted).				
	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Bombay	4,198	4,819	4,562	3,544	3,861
Madras	595	862	847	594	507
Bengal	375	452	355	127	245
Sindh	130	144	121	150	156
Burma	32	42	28	10	20

Bengal exports only about 5 per cent. of the whole. Bengal proper in fact produces no cotton, but Calcutta used to be the port of shipment for cotton produced in the North-Western Provinces intended for China and other countries in the East. Now most of that trade has been diverted to Bombay.

Hides and Skins.—The average number of hides exported annually in the last five years has been about 6,660,000. There has been no material increase in this trade in recent years, doubtless because of the increased demand in the country itself for hides for tanning purposes. The bulk of this trade is carried on with the European Continent—Austria, France, Germany, Italy. In the export of skins (chiefly goat-skins) there has been a large increase of late years. Of this trade the United States possess about three-fourths. In the case of both hides and skins the shipments are mainly made from Bengal.

Jute.—The exports of jute during the last 10 years were as follow (cwt., 000's omitted):—

	Cwt.	Rx.		Cwt.	Rx.
1883–84	7,018	4,592,635	1888–89	10,553	7,897,154
1884–85	8,369	4,661,368	1889–90	10,256	8,639,861
1885–86	7,782	4,355,362	1890–91	11,986	7,602,010
1886–87	8,307	4,869,815	1891–92	8,532	6,848,493
1887–88	9,643	6,040,379	1892–93	10,537	7,944,223

The declared export values of the last six years averaged—

	Rs. per cwt.		Rs. per cwt.
1887–88	6·26	1890–91	6·34
1888–89	7·5	1891–92	8·02
1889–90	8·42	1892–93	7·54

In discussing the trade of 1891–2 the remark was made that "last year with a very short crop prices again rose very high. This is always a very speculative trade, and speculation in it was at its height in Calcutta last year." The speculation continued in 1892–93 with unfortunate results to some, but the features of the trade are accurately presented by the Collector of Customs in Calcutta, in the remarks quoted below:—

"The past year has been a most unfortunate one for many persons engaged in the jute trade. At the beginning of the year prices were high and remained so for some time. There was considerable speculation amongst shippers, who thought there would be a scarcity before the new crop came in, but they held too long, and a heavy drop in prices occurred owing to the forecast of a very large crop. Accepting this forecast balers sold largely to shippers who engaged their freight for the stuff they had bought. Supplies, however, came slowly into the market, and rumours were circulated that the crop was a small one, the consequence being that prices advanced. Balers and shippers were unable to fulfil their contracts, and claims have been made the results of which must have been serious for some of them. In freight alone, which is always a considerable charge, very heavy losses were suffered owing to the inability of shippers to load the ships chartered, and relets had to be made at very low rates. The forecast of the crop, however, finally turned out to be not so incorrect as was believed, and there was a fall in prices during the months of largest shipments, namely, October, November, and December, but by judicious management on the part of suppliers prices were again forced up, though in March 1893 they showed a heavy decline on the opening prices of April 1892. To the shippers, however, who held off and bought at the low prices and with the low freights ruling the year cannot have been a bad one."

The destination of the jute has been as follows (cwt., 000's omitted):—

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
United Kingdom	6,313	7,498	7,079	6,745	5,184	6,133
United States	2,331	1,682	1,804	2,716	1,573	1,928
Germany	351	684	652	1,433	950	1,361
France	54	161	233	295	218	326
Italy	266	184	223	305	186	288
Austria	183	203	110	317	149	255
Spain	124	104	113	137	63	185

Manures.—Exports of manures continue on a large scale though they have not reached the level of 1890–91 when the country was ransacked for every bone to be found lying on the ground. Last year's exports amounted to 47,584 tons of bones and 1,032 tons of other kinds of manures. These bones are scattered over the world having been shipped to England, Belgium, Germany, the United States, Ceylon, Australia, and other countries. It would be best that the Indian agriculturist should use these fertilisers for his own fields, but if ancient custom or religious prejudice prevents him from using them, certainly the next best thing is to sell them for money to those who want them.

Saltpetre.—Saltpetre did better during the year than in any of the four preceding years, the exports amounting to 443'931 cwt., value Rx. 438,940.

Seeds.—Exports of seeds during the last ten years have been—

—	Cwt. (000's omitted.)	Rx.	—	Cwt. (000's omitted.)	Rx.
1883–84	17,355	10,083,758	1889–90	15,795	10,627,553
1884–85	18,251	10,745,203	1890–91	14,799	9,343,252
1885–86	17,280	9,948,350	1891–92	19,164	12,208,457
1886–87	15,866	9,198,560	1892–93	16,509	11,631,015
1887–88	16,060	9,385,024			
1888–89	15,570	9,561,756			

The trade in the principal kinds of oil-seeds was as follows in the last five years :—

—	Cwt. (000's omitted.)				
	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Castor	586	895	860	836	989
Earth-nuts	828	1,394	1,525	1,530	1,525
Linseed	8,461	7,147	8,077	10,866	7,817
Poppy	730	483	678	616	502
Rape	3,061	3,904	1,555	2,616	2,802
Til or jinjili	1,537	1,775	1,847	2,302	2,555

The decrease in the exports of oilseeds was due to the restriction of trade in linseed, the crop of which was poor both in Bengal and Bombay, from which provinces almost all the linseed that leaves India is exported. The exports from Calcutta and Bombay in the last two years have been :—

—	1891–92.	1892–93.
	Cwt.	Cwt.
Calcutta	5,899,445	4,098,495
Bombay	4,891,683	3,718,966

The exports of other seeds were well maintained. It will be noticed that the exports of earthnuts appear to have remained stationary for the last three years. This, however, is not entirely the case, for a great impetus has been given to the cultivation of this seed in the southern districts of Madras in consequence of the growing demand for it in Marseilles for soapmaking. But the export trade has been to some extent diverted from British Indian ports to the French-Indian ports of Pondicherry and Karikal, and the view of the progress of the trade is consequently obscured.

The export of cotton seed remains at an extremely low level, the quantity shipped last year being only 23,550 cwt. value under Rx. 6,200. Of this quantity only 218 were shipped to the United Kingdom though that country imported in all in 1892 the large quantity of 409,668 tons, mainly from Egypt. It seems singular that England will take neither our cotton nor our cotton seed, but it is not easy to understand what are the conditions which prevent the development of this trade. There must be a very large quantity of seed available in India, and there is a considerable demand for it in Europe.

Silk.—Exports of raw silk are as follow in lbs. (000's omitted) :—

—	Reeled.	Chasam (Waste).	Cocoons.	Total Value in Rx.
1883–84	673	886	44	627,612
1884–85	531	953	83	463,791
1885–86	358	1,024	57	332,251
1886–87	449	1,020	114	484,339
1887–88	453	998	173	480,811
1888–89	433	1,314	374	518,751
1889–90	593	1,233	263	639,818
1890–91	503	1,122	146	521,069
1891–92	519	1,012	131	518,627
1892–93	655	1,087	77	617,574

Bengal silk shared in the general good time which all raw silk had in Europe in 1892. For some occult reason that year saw a run on silk goods, and, to the surprise of traders, they saw the unaccustomed feature (in recent years) of consumption overtaking production.

The silks of the undomesticated worms (*tasar*, *munga*, *eria*, &c.) have not maintained the place in the export trade which they took a few years ago. In the last seven years the exports of such silks have been as follows :—

	Lbs.		Lbs.
1886–87	443,140	1890–91	374,587
1887–88	479,248	1891–92	239,939
1888–89	618,723	1892–93	240,604
1889–90	656,302		

Teak Timber.—Exports of teak timber for the last twelve years :—

—	Cubic Tons.	Rx.	—	Cubic Tons.	Rx.
1881–82	56,377	506,792	1887–88	40,446	367,274
1882–83	59,187	611,260	1888–89	52,609	575,263
1883–84	46,471	525,447	1889–90	71,342	762,998
1884–85	47,556	532,129	1890–91	42,803	425,303
1885–86	50,076	550,515	1891–92	48,190	474,852
1886–87	23,946	223,154	1892–93	58,350	570,102

The trade was fairly good after two years of restriction, but the following remarks from the report of the British Consul at Bankok for 1892 merit attention :—

"The quality of teak which has been shipped to London from Bangkok has much improved of late. Shipments are now confined to three British firms, and great care is exercised in selecting the choicest wood. Burma wood has still the best reputation in home markets, but there is now nothing to choose between the two. The preference is certainly to be given to Siam as regards cube average and length, the former of which occasionally reaches 50 feet, and the average length is seldom below 28 feet. The shorter lengths of 15 to 20 feet seem to be plentiful in Burma cargoes, which is due to the fact that the forests on the Burma side are probably more exhausted than those of Siam. When the improved quality of Bangkok shipments becomes more generally known to buyers in London and on the Clyde, Siam teak will doubtless be more in demand than that of Burma."

Siamese teak is now being imported into Bombay in competition with Burmese teak

Wool.—The exports of wool have been as follow in the last six years :—

—	Lbs. (000's omitted.)	Rx.
1887–88	23,877	972,346
1888–89	21,961	968,753
1889–90	23,870	1,085,637
1890–91	21,345	968,322
1891–92	22,314	1,013,864
1892–93	24,718	1,116,578

Here may be repeated the remarks made last year :—

"Indian wool is of such low quality that it is used only for the manufacture of the most inferior classes of goods, and even for them the demand is limited because it is troublesome to work owing to the admixture of hair and dirt in it. It is doubtful whether the trade will increase appreciably unless a radical modification of the conditions is secured. It is susceptible of large expansion, and the matter is worth the attention of those who are concerned in the trade."

The latest returns of the woollen manufacturing industry in India down to December 1892 show that there are five mills, employing a capital of Rx. 295,000 and 2,582 persons, with 532 looms and 17,210 spindles. The industry made no advance in 1891 so far as the number of looms and spindles are concerned, but at Cawnpore much progress has been made in the classes of goods manufactured. Using Australian and Thibetan wool, the finer classes of goods—serges and other cloths, and hosiery—are being made of excellent quality, but as yet in comparatively limited quantity.

Articles Manufactured and partly Manufactured.

The following figures indicate the relative proportions of each principal class of manufactures and the progress made since 1881–82 :—

—	1881–82.	1890–91.	1891–92.	1892–93.	Increase or Decrease Per Cent. compared with 1881–82.
	Rx.	Rx.	Rx.	Rx.	
Cotton yarn and cloth - -	2,010,516	7,702,640	7,035,036	8,100,658	+ 303
Jute goods - - -	1,097,589	2,481,961	2,513,100	3,237,993	+ 195
Silk goods - - -	221,617	203,181	183,957	197,178	— 11
Woollen goods - - -	196,683	104,166	94,788	120,080	— 39
Tanned hides and skins -	1,918,973	2,535,363	2,818,959	2,956,439	+ 54
Lac - - - -	709,256	781,264	750,531	780,163	+ 10
Coir goods - - -	182,114	194,801	244,929	232,279	+ 27
Apparel - - -	58,524	103,429	119,204	145,426	+ 148

The increase in this class is one of the most satisfactory features of Indian trade. In five years the value of the exports of manufactured goods has increased from Rx. 13,109,477 to Rx. 16,424,756, an increase of 25 per cent., and there is good reason to anticipate that these are but the small beginnings of a trade which in the future will be many times its present dimensions.

Cotton Yarn.—The exports are as follows :—

—	Lbs. (000's omitted.)	Rx.	—	Lbs. (000's omitted.)	Rx.
1883–84	49,876	1,926,162	1888–89	128,907	5,207,100
1884–85	65,897	2,441,101	1889–90	141,950	5,748,732
1885–86	78,242	2,755,252	1890–91	169,275	6,543,364
1886–87	91,804	3,336,861	1891–92	161,253	5,771,033
1887–88	113,451	4,077,386	1892–93	189,175	6,773,482

Athough the quantity exported increased by 17 per cent. and the value increased in like proportion, the year's trade can hardly be regarded as satisfactory. The production of the mills has for the time overtaken consumption, and with dull and dragging markets in China where the Indian yarns are in the main consumed, it was decided last February to be necessary for the mills to work short time.

The following remarks are quoted from the report of the Bombay Millowners' Association for 1892 :—

"In some respects the past year has been a disappointing one for those engaged in "cotton spinning and weaving in India, the high prices attained by the raw material "having seriously circumscribed profits; but, on the other hand, there is much room "for satisfaction in the fact that the consumption of goods and yarns, both locally and "in the further East, shows a steady rate of progression; and doubtless, when prices "of cotton recede to a level which will enable manufacturers to sell at rates low "enough to encourage consumption, a marked expansion in the demand will be

"experienced." . . . . "Although, as previously mentioned, there has been a "continuously large and, in fact, increased demand for the production of the mills, "the high prices of cotton towards the end of the year have so materially curtailed "profits that several millowners and agents have shown a desire to adopt short time. "Up to the time of writing this report, however, the movement has not received "general support, and opinion seems considerably divided as to whether, in the "eventual interests of the industry, it will not be better—while the demand is so "good—to continue working at a very bare margin of profit, or even with no profit at "all, in preference to enhancing the cost of production by short time."

The exports of cotton piece-goods (grey, white, and coloured) in the same period have been (in yards, 000's omitted):—

1883–84	55,564	1888–89	70,244
1884–85	47,908	1889–90	59,462
1885–86	51,528	1890–91	67,639
1886–87	53,360	1891–92	73,351
1887–88	69,434	1892–93	79,679

The distribution of the exports in the last three years has been as follows:—

	Yarn, Lbs. (000's omitted).			Piece-Goods, Yards (000's omitted).		
	1890–91.	1891–92.	1892–93.	1890–91.	1891–92.	1892–93.
China	151,050	145,558	176,860	5,538	7,351	13,506
Japan	11,876	6,682	7,352	17	—	65
Aden	1,852	2,251	1,347	12,685	11,764	12,370
Straits	2,045	3,987	1,729	5,498	6,318	6,775
Asiatic Turkey	943	941	747	1,306	2,789	2,294
Java	533	284	326	—	26	39
Arabia	299	440	286	2,643	3,209	3,525
Persia	324	392	337	930	1,715	1,375
East Coast of Africa (Mozambique and Zanzibar).	46	118	44	25,509	27,835	24,888
Abyssinia	—	4	—	3,940	1,773	3,154
Ceylon	265	46	70	6,533	6,692	7,219
Mekran and Sonmiani	42	7	75	1,062	1,537	1,623
Other countries		541	—	1,978	—	2,844

The progress of the spinning and weaving industry in the last fifteen years is shown in the table appended:—

Year.	Number of Mills.	Number of Spindles.	Number of Looms.
1878–79	58	1,436,464	12,983
1882–83	62	1,654,108	15,116
1887–88	97	2,375,739	18,840
1890–91	125	3,197,740	23,845
1891–92	127	3,272,988	24,670
1892–93	130	3,378,203	26,317

Only five new mills have been constructed during the last two years.
The mills are located as follows:—

	Mills.	Spindles.	Looms.
Bombay Presidency	88	2,402,673	19,847
Bengal (suburbs of Calcutta)	8	304,354	—
Madras	11	239,200	973
North-Western Provinces	5	134,428	2,156
Punjab (Delhi)	2	21,642	154
Central India (Indore)	1	26,036	464
Central Provinces	5	87,944	876
Ajmere-Merwara	1	12,312	250
Hyderabad	3	52,238	609
Berar	1	17,636	214
Mysore	2	29,784	215
Pondicherry	2	27,056	559
Travancore	1	23,000	—

About 121,000 persons are stated to have been employed in the mills at the end of 1892–93, and the capital invested is returned at Rx. 11,340,000, but several of the mills, private concerns, make no return of their capital, the figures being confined to mills worked by joint stock companies.

About three-fourths of the spinning and weaving capacity of the Indian mills are concentrated in the Bombay Presidency and mostly in the city and suburbs of Bombay.

Jute.—The value of the exports of manufactured jute in the last ten years has been :—

——	Rx.	——	Rx.
1883–84	1,334,145	1888–89	2,571,477
1884–85	1,543,870	1889–90	2,791,242
1885–86	1,130,808	1890–91	2,481,961
1886–87	1,151,858	1891–92	2,513,100
1887–88	1,746,360	1892–93	3,237,993

The exports of gunny-bags and cloths have been as follow, the quantities being stated in numbers for bags and yards for cloth, 000's omitted in both cases :—

——	Bags.	Cloth.	——	Bags.	Cloth.
1883–84	63,646	7,049	1888–89	99,790	15,160
1884–85	82,779	15,344	1889–90	97,416	37,144
1885–86	63,760	20,154	1890–91	98,749	29,854
1886–87	64,570	12,799	1891–92	106,251	37,289
1887–88	74,368	13,683	1892–93	123,975	40,060

The large increase in the exports of gunny bags was to a material extent counteracted by a restriction in the demand for bags in other parts of India, so far as the figures of the coasting trade indicate that demand, but on the whole the mills had a good year.

The destinations of the bags have been as follow :—

——	1891–92.	1892–93.
United Kingdom	14,461,500	21,746,768
United States	19,513,106	19,213,800
Australia	18,834,915	23,826,306
China	10,277,685	12,328,050
Straits	13,880,000	15,796,764
South America	6,671,700	8,228,950
Other countries	22,611,706	22,834,348

Of the gunny cloths more than three-fourths are taken by the United States.

The statistics of the 25 jute mills in Bengal are as follow :—

——	1891–92.	1892–93.
	Rx.	Rx.
No. of looms	8,543	8,814
No. of spindles	171,134	177,718
No. of persons employed—daily average.	65,000	66,013
Nominal capital (figures incomplete).	3,104,500	3,409,950

With the exception of tanned hides and skins and lac, the other articles in this class are of no special importance singly.

Tanned Hides and Skins.—The exports of tanned hides and skins (mainly from Madras) in the last five years have been as follow, most of the exports being to England:—

	Cwt.	Rx.
1888–89	272,960	2,614,102
1889–90	260,716	2,524,008
1890–91	272,376	2,535,363
1891–92	290,401	2,818,959
1892–93	298,930	2,956,439

This trade has been making considerable progress during the last two years, and though the scarcity has no doubt assisted, by supplying the skins cheaply, it would seem that the industry has now been established on a sound basis.

Lac.—The exports of shell and button lac declined again, following a decline in the preceding year, but prices were high, the value being Rx. 780,163 compared with Rx. 750,531, although the quantity was only 125,613 cwt. compared with 137,466 cwt. The trade is very speculative and fluctuating.

Oilcake.—A small trade which may in the future grow to considerable proportions if, instead of shipping oilseeds, we should press the seeds in India and export the oil, is the export of oilcake to England and Ceylon. In the last five years the value of the trade has risen from Rx. 64,397 to Rx. 118,495.

CHAPTER IV.

Trade with Countries.

In the subjoined table are given the figures of our trade (merchandise only) with the several divisions of the world during the last three years:—

	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.
With Europe	115,044,358	117,156,569	111,652,397
With Africa and adjacent islands	9,632,186	12,388,786	9,882,659
With Asia	36,588,254	37,413,865	38,947,566
With America	6,429,218	6,402,423	7,301,177
With Australia	1,476,605	1,261,412	1,357,228
Total	169,170,621	174,623,055	169,141,027

During the year the trade with Europe fell off by 4·6 per cent., and with Africa by more than 20 per cent. The trade with Asia increased by 4 per cent., with America by 14 per cent., and with Australia by 7½ per cent.

The following table shows the value of the merchandise interchanged in the last three years with the principal countries with which we have commercial relations:—

	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.
1. United Kingdom	84,857,056	82,812,412	77,317,138
2. China—Hong Kong	11,592,162	11,446,502	11,501,325
2. „ Treaty Ports	5,268,530	5,254,136	5,894,671
3. France	8,695,093	12,009,383	10,142,280
4. Germany	6,086,746	6,616,134	7,979,400
5. Straits Settlements	8,059,602	7,602,766	7,120,759
6. Belgium	5,629,094	6,790,285	6,074,482
7. United States	5,503,992	5,079,207	5,662,279
8. Egypt	4,630,909	7,310,940	5,028,788
9. Italy	4,131,841	3,538,308	4,023,693
10. Ceylon	3,381,720	3,595,541	3,949,746
11. Austria	3,582,676	3,020,102	3,643,285
12. Mauritius	2,870,796	2,980,913	2,605,578
13. Persia	2,451,125	2,723,344	2,586,879

	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.
14. Japan	1,270,458	1,360,950	1,708,581
15. Arabia	1,268,607	1,301,281	1,586,351
16. Russia in Asia	858,968	1,129,129	1,488,623
17. South America	732,000	998,911	1,377,820
18. Australia	1,476,605	1,261,412	1,357,228
19. Zanzibar, Mozambique, and other ports on the East Coast of Africa.	1,347,367	1,239,170	1,269,292
20. Turkey in Asia	931,961	1,352,253	1,203,557
21. Aden	1,017,136	952,135	1,116,051
22. Holland	428,617	1,087,486	877,604

Our total trade (merchandise and treasure) in the year 1892-93 with gold standard countries was Rx. 147,218,375, and with silver standard countries Rx. 45,861,456. The trade with gold standard countries was thus over 76 per cent., and with silver standard countries under 24 per cent. of the whole trade, and the former was to the latter in the ratio of more than three to one. It is assumed in making this calculation, that (1) all European countries except Russia, and all the American countries with which we trade, except South America, are gold countries; (2) all the African countries with which we trade, except Egypt, Cape Colony, Natal, and St. Helena, and all the Asiatic countries, except Java, Persia, and Turkey, are silver countries.

European Trade.

Our trade in merchandise with the European continent was last year 71 per cent. of our whole trade, and the trade with the United Kingdom is 69 per cent. of the trade with Europe. The bulk of the imports into India comes from the United Kingdom, but the exports from India are much more equally divided amongst other European countries, thus :—

		Rx.
Imports	From United Kingdom	44,005,841
	From other European countries	5,819,648
Exports	To United Kingdom	33,311,297
	To other European countries	28,515,611

United Kingdom.—The trade with the United Kingdom declined by 6·6 per cent., following a smaller decline in the preceding year.

The import trade was as follows :—

	Rx.
1891–92	48,271,400
1892–93	44,005,841

The decrease being nearly Rx. 4¼ millions. The extent to which this decline was due to a restriction in the imports of cotton yarns and fabrics is apparent from the following figures :—

	1891–92.	1892–93.
	Rx.	Rx.
Value of cotton yarns	3,432,094	2,606,482
Value of cotton fabrics	24,614,008	22,364,694

These articles declined to the extent of Rx. 825,612 and Rx. 2,249,314 respectively, making a total decline of over Rx. 3,000,000. In the case of yarns, imports from the United Kingdom declined proportionately less than imports from other countries, but as the United Kingdom has practically the monopoly of the importation of yarns into India, that fact has no significance. In the case of fabrics, the imports from the United Kingdom declined, while imports from other European countries increased, the value of imports from Europe (excluding the United Kingdom) being Rx. 444,246

last year, against Rx. 373,020 in 1891–92. As will be noticed, however, the total value is a trifle compared with the value of imports from England.

The decline in these goods in the year is in a material degree due to the strikes in Lancashire, which, with other causes, increased the cost of Manchester goods to the point at which buying stopped and demands were met from stocks in hand. These stocks were allowed to run down to a very low ebb, and they are being replenished by much larger imports during the present year. But there is no doubt, looking at the course of the trade over a series of years, that the competition of the Indian mills is telling on the imports of Manchester goods. The mills are gradually beginning to make the medium classes of goods which form the bulk of the imports, and they are also beginning to bleach and dye these goods.

Various other commodities also declined: coal, hardware and cutlery, liquors, copper, tin, iron and steel, railway material, paper, silk, and woollen goods. An examination of the returns tends to support the conclusion that, in respect of British manufactures, continental competition is gradually making way, and in respect of continental goods, of which the United Kingdom was the depôt for shipment, the trade with India is being conducted direct in an increasing degree.

The diversion of our exports from the United Kingdom direct to the continent is also becoming increasingly visible. Thus our exports of cotton have dwindled very rapidly in recent years as will be seen from the following figures:—

	Cwt.		Cwt.
1883–84	2,697,000	1888–89	1,776,000
1884–85	2,135,000	1889–90	2,166,000
1885–86	1,435,000	1890–91	1,520,000
1886–87	2,046,000	1891–92	710,000
1887–88	2,140,000	1892–93	528,000

The explanation is that in England Indian cotton has been used in a decreasing degree since the Indian mills entered upon effective competition with the Lancashire mills in the spinning of the lower counts for which Indian cotton was mainly used. What was shipped to England was to a very large extent re-shipped to the continent, and now it is going direct to the continent from India to the saving of freight and other charges. As regards other staple exports, the trade was smaller in wheat, hides, lac, linseed, raw silk, sugar, and tea; and it was larger in rice, indigo, skins, raw jute and gunny bags, and raw wool. It may be that the exports of gunny bags indicate an increasing success in the competition of Calcutta with Dundee, but in other respects these fluctuations present no special significance as regards the trade of the United Kingdom, compared with that of other countries, with India.

It must be noted again, however, as was done last year, that the proportion of our trade with the United Kingdom to our trade with the world generally has been declining. In 1881–82 it was as much as 57 per cent. of the whole; in 1890–91 it was just over 50 per cent.; in 1891–92 it had fallen to 47·4 per cent.; and last year the proportion was only 45·7 per cent.

Austria.—With Austria the import trade continues to increase; last year it was Rx. 1,031,939, an increase of about 23 per cent. on the trade of the preceding year. Probably some of this large increase was due to the diversion of trade from Hamburg to Trieste in consequence of the cholera epidemic. The increase was spread over most of the goods which form the bulk of the trade of Austria and Germany with India: cotton prints, aniline and alizarine dyes, beads and other glassware, printing paper, silk goods, sugar, and woollen goods.

The export trade also increased by about 20 per cent., though it was still materially below the level reached in the three years before 1891–92. The increase was in the main due to a revival of the trade in cotton and indigo, and in hides and jute, the two former articles forming the bulk of the trade.

Belgium.—The import trade with Belgium has again largely expanded, reaching Rx. 1,645,470 last year, being an increase of 24 per cent. on the trade of the preceding year. Probably, as in the case of Trieste, Antwerp may have got some trade which would in an ordinary year have gone to Hamburg. But certainly imports from Belgium have in recent years increased in a surprising degree. The trade was last year more than three times as large as it was five years previously. The subjoined

list shows the principal articles imported from Belgium and the development of the trade in the five years :—

——	1888–89.	1892–93.
	Rx.	Rx.
Iron	143,139	597,912
Steel	43,788	152,045
Aniline and alizarine dyes	76,349	282,731
Glass—sheet and other ware	64,298	125,053
Hardware and cutlery	24,532	61,233
Candles	11,034	48,683
Earthenware and porcelain	8,144	48,044
Copper	8,437	40,061
Matches	5,009	32,634

Exports to Belgium have not increased in the same period to anything like the same extent. Last year's exports were in fact rather less than in 1888-89, though in the intervening years they have risen to a high level. Last year succeeded a year of extraordinary exports of wheat, and this trade having receded to a point even lower than its normal level, the totals have been materially affected, although a larger trade was done in cotton and oilseeds.

France.—Imports from France were slightly under the point reached in the preceding year, Rx. 1,034,358 compared with Rx. 1,035,978. There is nothing special in the fluctuations of the trade to call for notice. It has, on the whole, a tendency to increase, but it presents no new features.

The export trade was much smaller than that of the preceding year, which, however, was quite abnormally large, owing to the enormous exports of wheat consequent on the failure of the harvests in Continental Europe. French fiscal restrictions have reduced the exports of rice to a very low point. Our main exports to France are coffee, cotton, indigo, wheat, hides and horns, jute, oilseeds, raw silk, pepper. Among oilseeds earthnuts have taken a conspicuous place in recent years, the increase of the trade being shown in the figures below :—

——	Cwt.	Rx.
1888–89	556,969	335,891
1889–90	802,409	487,346
1890–91	995,875	577,962
1891–92	1,185,358	687,445
1892–93	1,228,339	859,951

The cultivation of this oilseed, which is used by the soap manufacturers of Marseilles, has taken great extension in southern India, and in addition to the increasing quantities shipped to France from British Indian ports, large quantities are taken from British districts to the French Indian ports for export.

Germany.—The value of the imports from Germany was Rx. 1,451,330, being close on 5 per cent. short of that of the preceding year, the cause of the decrease lying in a large reduction in the exports of salt. There was a general restriction of trade in most articles, with the exception of sugar, in which there was some recovery. The outbreak of cholera at Hamburg had a somewhat serious interrupting effect on trade.

Exports, however, increased largely, rising from Rx. 5,073,527 to Rx. 6,517,185, the trade in cotton, jute, hides, and oilseeds having been active. Germany was also one of the very few countries which took a larger quantity of wheat from us last year.

Holland.—The imports from Holland, consisting mainly of cotton prints, coal-tar dyes, gin, and woollen goods, have increased to Rx. 206,746, the value five years previously having been only Rx. 11,715. Exports, as was anticipated, have receded greatly from the level of 1891–92, when the trade in wheat and linseed was abnormal. The value of the trade, Rx. 670,433, is nevertheless double what it was five years previously.

Italy.—Imports from Italy fell from Rx. 535,906 to Rx. 356,306, the principal articles in the trade all showing a decline: corals, beads, cotton prints, and silk piece-goods. Exports, however, recovered from the depression of the preceding year, the trade in cotton, jute, hides, oilseeds, and raw silk having advanced. But the develop-

ment of our trade with Italy has been but slow and unsatisfactory, owing partly to the fact that Italy has nothing to send us but a few luxuries for which the demand in India is but limited, and partly to the protective fiscal régime now in force in Italy and the financial and commercial condition of the country during the last two or three years.

Malta.—Trade with Malta consisted almost entirely of the export of rice to be stored in the rock granaries until a demand arose in Italy, but with the imposition in Italy of import duties which are intended to keep out foreign rice, the trade has fallen away to next to nothing. The total value of Indian exports last year was only Rx. 84,344, of which the exports of rice were Rx. 70,344.

Russia.—Russia in Europe sends us nothing and we send nothing to Russia in Asia. But as we import from Asiatic Russia and export to European Russia, it will be convenient to treat the whole Empire together here. Imports from Asiatic Russia consist, practically exclusively, of kerosine oil from Batoum. The rapid development of this trade has been referred to elsewhere (page 13). It has raised the value of the imports from Russia in five years from Rx. 834,790 to Rx. 1,488,623.

Exports to Russia consist almost entirely of cotton, indigo, and seeds sent to Odessa, and the trade fluctuates greatly with the fluctuations in the trade in cotton. In 1891–92, in consequence of the famine in Russia, the shipments of cotton were reduced to a minimum : last year they were four times as large. The total value of exports was Rx. 682,869.

African Countries.

Egypt.—The largest part of our trade with Africa and the islands on its eastern coast is carried on with Egypt, and in the main it is really trade with Europe, most of the exports being shipped to Egypt only nominally.

Imports are as yet small, only amounting to Rx. 158,995 last year, but that sum was double the value of the imports five years before. The increase is due to the expansion in the imports of Egyptian long-stapled cotton for the Bombay mills, where it is now being used for the manufacture of some of the finer classes of goods, for which the Indian short-stapled cotton it unsuitable. The imports of this cotton have rapidly increased in recent years, as will be seen from the figures below, and it is possible that the import may be but the beginning of a large trade :—

	Cwt.	Value.
		Rx.
1888–89	850	2,108
1889–90	385	1,337
1890–91	3,513	14,699
1891–92	6,479	25,421
1892–93	28,548	86,759

More than four-fifths of the exports were represented by rice and wheat shipped to Port Said for orders. There was a very large decline in the exports in the year.

Mauritius.—There was a heavy decline in the import last year of sugar which, with a little cocoanut oil, is the only thing received from Mauritius. The destructive cyclone which ravaged the island last year interfered greatly with the trade, and the deficiency in Mauritius sugar was supplied to some extent by sugar from China.

Exports fell off also, the demand for rice, the principal export, having been smaller than usual, the purchasing capacity of the colony having been greatly affected by the cyclone, and the deficiency in the quantity of exportable sugar diminished the demand for gunny bags.

Abyssinia.—The trade with Abyssinia lies in the main in the export thither of jawar and bajra millets, for which the demand is, to much the largest extent, confined to the Arabian and African coasts. The exports to Abyssinia of these millets practically only began five or six years ago. In the last three years the quantity shipped has averaged 492,000 cwt. There is a much smaller demand for Indian cotton piece-goods in this region than might have been expected, only 3,154,000 yards having been exported in the year.

Cape Colony.—Rice and gunny bags constitute the main features of the trade with Cape Colony. The value of the exports last year of rice was Rx. 71,075 and of gunny bags Rx. 126,701.

Natal.—The trade to Natal is much the same as to Cape Colony, with the addition of provisions and other articles required for the Indian coolie population in the colony. Of rice the value was Rx. 67,438, and of gunny bags Rx. 43,514.

Mozambique.—Imports from Mozambique are small, and limited mainly to ivory. There is a fairly large trade done in exports of foreign goods, largely Manchester cottons, but Indian cottons are shipped in much more considerable quantities—9,843,000 yards last year—and the trade should be capable of great development.

Zanzibar.—Imports from Zanzibar are rapidly dwindling, as will be apparent from the import values below :—

	Rx.		Rx.
1888–89	568,474	1891–92	291,723
1889–90	559,805	1892–93	228,306
1890–91	412,673		

There were three principal articles in the import trade, cloves, ivory, and cocoanut-kernel. The last has almost ceased to be dealt in, and the other two have been fast diminishing. They were brought to Bombay to be for the most part reshipped to Europe, but there has been a great development of direct communication between Zanzibar and Europe by means of British and German steamers, and the trade has been largely diverted from Bombay.

The exports and re-exports also have not been increasing, though they have not diminished as the import trade has done :—

	Re-exports.	Exports.
	Rx.	Rx.
1888–89	185,092	282,573
1889–80	265,310	416,830
1890–91	270,893	365,525
1891–92	224,411	412,428
1892–93	242,617	400,232

The most important part of this trade—the export of Indian piece-goods—has not been increasing as it ought to have done, and it would seem that European goods must be coping successfully with our manufactures in these regions. The exports have been in the five years :—

Yards.	Yards.
11,643,000	19,169,000
13,411,000	15,030,000
18,121,000	

American Countries.

United States.—The imports from the States now consist practically of the following articles :—

	1891–92.	1892–93.
	Rx.	Rx.
Mineral oil, chiefly kerosine	1,084,148	1,027,940
Cotton piece goods (grey)	55,193	34,955
Tobacco	20,584	20,706
Clocks and watches	10,299	10,960

These items make up a total of Rx. 1,094,561, the aggregate of the import trade being Rx. 1,134,438. Mineral oil forms the bulk of the trade, and the imports, after reaching nearly 36 million gallons in 1889–90, have fallen steadily since then, under the pressure of competition with Russian oil, to but little over 26 million gallons last year. The imports continue during the present year to diminish rapidly and the imports from Russia to increase.

Exports to the United States, on the other hand, increased largely during the year, rising from Rx. 3,872,593 to Rx. 4,512,988. This increase was due to the higher prices which ruled for indigo and jute manufactures, of both of which the States take a large quantity, and to largely increased exports of cutch, raw skins, raw jute, saltpetre, and cocoanut oil. These increases in prices and quantities largely counterbalanced the

restrictions of trade in some other articles which the United States take extensively from India, such as lac and linseed. The trade in the last mentioned article has, indeed, as observed in the review of the trade of 1891–92, been practically extinguished by the operation of the McKinley tariff. The extent and present condition of the trade will be seen from the figures subjoined :—

	Cwt.	Rx.
1888–89	712,042	449,435
1889–90	772,758	509,196
1890–91	797,363	488,105
1891–92	125,660	76,304
1892–93	17,899	13,489

Linseed has been shipped now in increasing quantities to the West Indies and to South America, probably as a consequence of the stoppage of the trade with the United States.

South America.—This South American trade is limited in effect to the export of rice and gunny bags to Brazil and the countries employing coolie and Chinese labour, and both articles were shipped in largely increased quantities during the year, raising the value of the export trade from Rx. 996,418 to Rx. 1,368.910. It may be noted that the trade has increased about threefold in five years.

Countries in Asia.

Aden and Arabia.—There is no feature in the trade with Aden and Arabia calling for special notice. The trade continues on the lines that have often been mentioned in these reviews, and last year it was considerably larger than usual in consequence of great activity in the export of rice.

Ceylon.—The import and export trade with Ceylon also presents no special feature, except that the import of tea into India continues with some activity, 633,596 lbs. having been imported last year. As a sort of return gift on a smaller scale, 139,084 lbs. of Indian tea were shipped to Ceylon.

China.—Imports from China were slightly smaller than in the preceding year in consequence of a reduction in the trade in raw silk, and exports were larger, the trade in yarns having revived after the depression of the year before.

Much attention has been drawn to the trade with China in connection with the recent legislation closing the Indian mints to the unrestricted coinage of silver for the public, and somewhat exaggerated ideas of its importance have been expressed, especially by the chairman of a meeting of the shareholders of the Hong Kong and Shanghai Banking Corporation, held at Hong Kong a few weeks ago, who is reported to have spoken as follows : "During the 20 years from 1872 to 1892 the trade of India doubled, while " that portion of it with which we are more intimately acquainted, namely, the trade " with China, was increasing by leaps and bounds." In order that accurate notions on this subject may be substituted for general impressions and picturesque remarks, a table is attached of our import and export trade with China for the last quarter of a century.

Years.	Imports.				Exports.			
	Silk, Raw.	Silk Goods.	Tea.	Total of all Imports.	Cotton, Raw.	Cotton Yarn.	Opium.	Total of all Exports of Indian Goods.
	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value Rx.	Value. Rx.
1868–69	653,881	205,763	171,824	1,475,530	1,650,740	38,037	9,837,261	11,668,738
1869–70	792,121	193,387	146,212	1,618,498	1,186,621	45,089	10,880,084	12,296,095
1870–71	788,861	172,065	97,244	1,537,129	2,117,245	25,310	9,856,439	12,171,607
1871–72	517,564	215,937	163,729	1,358,613	1,159,215	58,688	12,273,480	13,747,005
1872–73	519,949	172,203	201,782	1,355,172	1,185,684	65,436	10,529,673	12,074,348
1873–74	631,433	211.084	151,035	1,396,565	897,111	78,981	10,274,422	11,431,361
1874–75	691,205	253,108	120,959	1,519,750	439,471	83,671	10,862,694	11,590,065
1875–76	553,482	256,638	200,867	1,517,984	1,257,328	204,414	9,776,701	11,434,460
1876–77	349,051	141,179	121,053	1,109,859	833,478	303,914	11,174,121	12,578,307

Years.	Imports.				Exports.			
	Silk, Raw.	Silk Goods.	Tea.	Total of all Imports.	Cotton, Raw.	Cotton Yarn.	Opium.	Total of all Exports of Indian Goods.
	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.	Value. Rx.
1877–78	522,343	180,150	172,545	1,423,673	577,147	606,615	11,203,997	12,634,935
1878–79	415,842	223,626	112.079	1,394,375	565,706	758,991	11,916,605	13,563,194
1879–80	502,964	236,138	190,543	1,579,074	869,751	970,515	13,123,489	15,399,151
1880–81	794,958	329,001	230,349	1,989,762	1,060,845	1,101,862	12,293,330	14,824,671
1881–82	515,668	224,897	149,024	1,540,961	983,854	1,149,807	11,011,657	13,488,564
1882–83	845,730	345,068	146,327	2,072,037	951,669	1,497,894	10,140,079	13,037,676
1883–84	754,187	401,843	199,131	2,133,644	745,654	1,585,491	10,288,453	13,074,765
1884–85	532,407	311,239	281,490	1,865,724	585,184	2,081,619	9,450,180	12,471,893
1885–86	571,900	338,154	261,932	1,851,747	534,144	2,392,704	9,301,258	12,556.020
1886–87	647,239	408,316	283,053	2,187,958	321,212	2,859,549	9,673,908	13,332,521
1887–88	871,013	474,582	213,043	2,415,036	512,649	3,264,046	8,684,310	12,954,096
1888–89	630,283	378,517	285,387	1,911,837	369,306	4,071,515	8,876,635	14,024,558
1889–90	758,057	517,620	299,287	2,440.501	319,376	4,547,171	8,421,143	13,801,477
1890–91	813,111	430,896	277,747	2,420,295	319,783	5,794,193	7,729,641	14,295,934
1891–92	983,954	533,648	351.893	2,877,138	266,051	5,161,716	7,803,855	13,711,883
1892–93	725,025	620,612	384,323	2,842,530	126,880	6,290,561	7,317,578	14,402,271

The average value of the total trade in the first five years of this period was Rx. 13,860,546, and in the last five years Rx. 16,547,484, and the increase in the 25 years amounts to only 19·3 per cent., a rate of increase which is far smaller than the rate of increase of Indian trade generally in the same period. In the first five years of the same period the Indian trade with the world generally (taking only merchandise imported and Indian merchandise exported as in the case of China) was Rx. 87,144,188; in the last five years it was Rx. 164,900,069, the increase amounting to as much as 89·2 per cent. compared with the trifle of 19·3 per cent. in the case of China. The truth indeed is that our trade with China has been of a non-progressive character, and that its growth has been smaller than that of our trade with almost any other country. The imports from that country are small, and as regards tea they do not carry any special advantage to this country, for the tea is for the most part brought to India for reshipment to the Persian Gulf, or across the frontier to markets which ought to be supplied with our own tea. In exports from India we find the trade in raw cotton, which formerly was extensive, apparently approaching extinction, and the value of the opium trade seriously diminished. The only other article exported which is worth mention is cotton yarn, and the development of that trade alone has saved the trade with China from falling very materially below the level of a quarter of a century ago. If the other branches of our trade with China had increased in anything like the same proportion as the yarn trade, the trade would indeed have increased by "leaps and bounds," but all that has been secured by the enlargement of that trade has been that a serious decline has been prevented.

Japan.—In the last five years the value of our exports to Japan has increased from Rx. 1,037,322 to Rx. 1,617,371, an increase of about 56 per cent. In last year's trade the exports of raw cotton, cotton yarn, and gunny bags all increased, but the increase in yarns has not continued into the present year, in which a heavy decline has taken place. The bulk of the export trade consists of raw cotton and yarn, and the figures of the trade are subjoined:—

—	Raw Cotton.	Cotton Yarn.	—	Raw Cotton.	Cotton Yarn.
	Cwt.	Lbs.		Cwt.	Lbs.
1887–88	125	17,391,646	1890–91	77,757	11,376,422
1888–89	390	23,143,460	1891–92	400,952	6,682,050
1889–90	60,837	22,686,714	1892–93	443,988	7,351,801

It was mentioned in the review of last year that the increased demand for the raw material and the decline in the demand for Indian yarns are the result of the establishment of the spinning industry in Japan. Some particulars of this industry are given elsewhere in this review.

Persia.—In discussing the trade with Persia for 1891–92 the hope was expressed that the export of Indian tea would rapidly increase. The hope has not been realised, and the trade has declined materially as the subjoined figures of the exports of foreign and Indian tea will show :—

——	Foreign.	Indian.	——	Foreign.	Indian.
	Lbs.	Lbs.		Lbs.	Lbs.
1887–88 - -	1,245,526	263,073	1890–91 - -	2,973,817	1,221,478
1888–89 - -	2,148,808	402,488	1891–92 - -	3,115,691	2,789,175
1889–90 - -	1,673,175	1,118,126	1892–93 - -	3,240,763	1,406,625

In the present year, however, the export seems to be increasing.

Straits.—The export of rice to the Straits was materially below that of 1891–92, and was indeed much below the average, local needs having been supplied from Cochin-China. The result was a heavy fall in the export trade, of which rice forms a substantial proportion.

Turkey.—The trade with Turkey declined, imports of wheat having fallen from the relatively high level reached in 1891–92, and smaller quantities having been taken of Manchester and Bombay cottons and yarns and of the other goods that comprise the trade.

Australia.

The importation of copper from Australia fell to a very low point. The export of gunny bags recovered substantially from the depression of the preceding year, and this article was little less than three-fourths of the whole export trade. There was a considerable reduction in the quantity of tea exported.

CHAPTER V.

Provincial Trade.

The figures of the trade of each province stand thus (in Rx.) :—

Imported Merchandise.

——	1890–91.	1891–92.	1892–93.
Bombay - - -	27,543,173	25,760,606	25,269,580
Bengal - - -	26,080,318	25,346,863	23,225,266
Madras - - -	6,219,325	6,003,935	5,248,396
Burma - - -	5,489,739	5,503,802	5,444,990
Sindh - - -	3,702,344	3,972,250	3,416,798

Exported Merchandise.

——	1890–91.	1891–92.	1892–93.
Bombay - - -	37,859,465	40,635,690	40,450,365
Bengal - - -	37,259,267	39,941,001	41,629,884
Madras - - -	10,714,371	10,037,976	11,125,421
Burma - - - -	9,602,861	10,082,526	9,200,783
Sindh - - -	4,699,757	7,338,816	4,129,543

Taking imports and exports of merchandise together, the foreign trade of each province stood as follows during the last three years in Rx. :—

	1890–91.	Per-centage on whole Trade.	1891–92.	Per-centage on whole Trade.	1892–3.	Per-centage on whole Trade.
Bombay	65,402,638	38·66	66,396,296	38·09	65,719,945	38·86
Bengal	63,339,585	37·44	65,287,864	37·96	64,855,150	38·34
Madras	16,933,696	10·01	16,041,911	9·18	16,373,817	9·68
Burma	15,092,600	8·92	15,586,328	8·92	14,645,773	8·66
Sindh	8,402,101	4·97	11,311,066	7·05	7,546,341	4·46

Last year was the exact converse of the year which preceded it. Then the trade of every province increased, Madras excepted. Last year the trade of every province declined, Madras excepted. Madras was suffering from drought and scarcity in 1891-92, from which the province had recovered by last year, but the trade did not quite reach the level of 1890-91. The decline was large in Burma and much larger in Sindh, in consequence of the restricted export of rice from the former province and of wheat from the latter. In Bengal and Bombay the decline was not serious.

The trade and navigation of India with foreign countries have been distributed during the last five years in the following proportions between the five chief ports. Treasure is included in the trade here :—

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
TRADE.					
Bombay	44·03	43·95	43·82	41·58	44·68
Calcutta	35·6	34·04	34·08	35·1	34·43
Rangoon	5·2	5·76	6·45	6·57	6·51
Madras	5·3	5·58	5·38	5·96	4·77
Karáchi	4·26	4·53	4·41	4·74	4·01
Total	94·39	93·86	94·14	93·95	94·4
SHIPPING.					
Bombay	35·22	31·48	31·33	32·9	33·78
Calcutta	25·41	24·74	23·61	23·64	25·88
Rangoon	10·1	10·9	12·80	11·12	10·72
Madras	7·22	8·26	7·87	8·85	7·64
Karáchi	6·71	7·76	8·03	7·7	6·78
Total	84·66	83·14	83·64	84·21	84·8

The following figures show the actual extent of the foreign trade of the largest ports of India in merchandise only, imports and exports (including re-exports), during the last five years in Rx. :—

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Bombay	65,292,332	65,748,016	65,371,569	66,351,980	65,674,674
Calcutta	62,288,262	63,112,379	61,750,573	63,933,101	63,640,119
Rangoon	9,310,022	10,893,701	12,437,563	12,614,528	12,525,228
Madras	9,296,678	10,339,281	10,020,739	8,917,973	9,067,535
Karáchi	7,377,212	8,405,722	8,402,099	11,310,986	7,546,292
Tuticorin	1,655,090	2,264,742	2,036,035	1,648,226	1,802,644

The increase or decrease of trade during this period in these ports has been at the rate mentioned below :—

Bombay	+	0·59 per cent.
Calcutta	+	2·17 ,,
Rangoon	+	34·53 ,,
Madras	—	2·46 ,,
Karáchi	+	2·29 ,,
Tuticorin	+	8·92 ,,

Except Madras and Tuticorn, the trade of each of them was less than the trade of the preceding year, materially less in the case of Karáchi; but the trade of that port was greatly augmented in 1891–92 by the abnormal export of wheat.

Government Stores.

The total value of these transactions was Rx. 3,749,655, being about 20 per cent. in excess of those of the preceding year, imports of stores amounting to Rx. 3,660,247 against Rx. 2,844,926. The increase was distributed over most of the larger heads: railway material, metals, machinery, coal, army munitions, woollen goods.

Customs Revenue.

The gross sum received on imports (excluding salt) since 1888–89 is as follows:—

——	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.	Rx.	Rx.
Arms and ammunition	26,089	23,867	28,017	31,730	31,163
Malt liquor	15,205	17,439	17,325	18,659	19,078
Cider and other fermented liquor	151	219	180	205	158
Spirits	482,854	492,371	533,385	518,838	543,226
Liqueurs	6,456	6,943	6,859	7,434	7,554
Wines	43,618	42,294	43,151	44,450	40,235
Opium	306	285	325	349	330
Mineral oil	117,489	162,392	165,040	174,662	202,308
Imports by post, &c.	159	133	139	132	116
Total gross revenue	692,327	745,943	794,451	796,459	844,170
Total net revenue	676,284	724,116	774,269	771,487	821,056

The net export revenue for the same years (levied exclusively on rice) is—

	Rx.		Rx.
1888–89	597,956	1891–92	857,502
1889–90	705,721	1892–93	725,402
1890–91	900,647		

CHAPTER VI.

Balance of Trade.

The excess of exports over imports, including treasure as well as merchandise, for each of the last ten years was (Rx.):—

——	Including Government Transactions.	Excluding Government Transactions.	——	Including Government Transactions.	Excluding Government Transactions.
1883–84	21,029,100	23,521,000	1888–89	15,548,400	18,266,400
1884–85	15,634,600	18,059,700	1889–90	18,709,700	21,219,400
1885–86	13,855,800	17,626,300	1890–91	8,440,700	11,253,200
1886–87	17,359,900	20,398,400	1891–92	27,305,200	29,869,100
1887–88	13,317,800	15,774,700	1892–93	30,279,300	33,850,100

The average excess of the ten years is Rx. 20,984,000.

In the same period the drawings of the Secretary of State in Council Bills have been—

——	Pounds.	Exchange.	Rx.	——	Pounds.	Exchange.	Rx.
		Pence.				Pence.	
1883–84	17,599,805	19·536	=21,621,400	1888–89	14,262,859	16·379	=20,899,100
1884–85	13,758,909	19·308	=17,102,400	1889–90	15,474,496	16·565	=22,418,700
1885–86	10,292,692	18·254	=13,532,500	1890–91	15,969,033	18·089	=21,186,900
1886–87	12,136,279	17·441	=16,700,300	1891–92	16,093,854	16·733	=23,082,800
1887–88	15,358,577	16·899	=21,812,400	1892–93	16,532,215	14·984	=26,478,400

the average being 14,747,872*l.* = Rx. 20,483,490.

Gold and Silver Coin and Bullion.

The imports and exports during the last ten years were—

Gold :—

——	Imports.	Exports.	Balance Net Imports.	——	Imports.	Exports.	Balance Net Imports.
	Rx.	Rx.	Rx.		Rx.	Rx.	Rx.
1883–84	5,469,400	6,900	5,462,500	1889–90	5,071,000	455,700	4,615,300
1884–85	4,778,100	106,200	4,671,900	1890–91	6,500,800	864,600	5,636,200
1885–86	3,091,500	328,600	2,762,900	1891–92	4,118,900	1,705,100	2,413,800
1886–87	2,833,600	656,500	2,177,100	1892–93	1,781,789	4,594,472	—2,812,683 *net exports.*
1887–88	3,236,100	243,600	2,992,500				
1888–89	3,119,100	305,200	2,813,900				

Silver :—

1883–84	7,408,500	1,003,400	6,405,100	1888–89	10,725,900	1,479,200	9,246,700
1884–85	9,110,000	1,864,400	7,245,600	1889–90	12,388,500	1,450,600	10,937,900
1885–86	12,386,200	779,600	11,606,600	1890–91	15,433,600	1,258,500	14,175,100
1886–87	8,219,700	1,064,000	7,155,700	1891–92	10,603,700	1,581,500	9,022,200
1887–88	10,589,800	1,361,100	9,228,700	1892–93	15,228,021	2,364,452	12,863,569

In 1891–92 gold began to flow out of the country in quantities greatly in excess of the usual export. In 1892–93 the movement continued in an increasing degree, and we have seen what has only once before been seen since statistics were first collected in 1835, a net export of gold. The single precedent for this was in 1878–79, a year of intense famine, when the people had to part with hoarded gold and export it instead of the produce which the soil had refused to bear. The exports of last year were to a great extent speculative, and based on the profit likely to accrue from an exchange of gold for silver. There was an unusually large speculative purchase of gold in 1890–91, when it was obtained cheaply, and the gold then bought was sold at a good profit in 1891–92 and 1892–93. There was a strong demand for gold from Austria-Hungary in view to the establishment of the gold standard in that country; and it is said that much of the gold shipped from India was bought to supply that demand.

The imports of silver into India were on an extremely and unnecessarily large scale. They have been exceeded only three times before since 1835, namely, in 1865–66 and 1877–78, both of them years of famine and borrowing, and in 1890–91, when the imports were entirely speculative. This may also be said of the imports of 1892–93, the silver being hurried into the country from December onwards to June in anticipation of the closure of the mints to coinage for the public.

The following statement shows the forms in which silver is mostly presented at the mints :—

——	1890–91.	1891–92.	1892–93.
	Ounces.	Ounces.	Ounces.
Bar silver	17,646,552	14,985,688	35,435,996
Sycee silver	5,205,912	3,888,421	1,940,254
Dollars (mainly Mexican)	12,914,737	4,772,295	3,143,159
Other sorts	6,819,803	418,501	314,213
Total	42,587,004	24,064,905	40,833,622

The very large quantity of "other sorts" in 1890-91 was due to an importation of Roumanian five-lei pieces which that country sold when it adopted a gold standard, and sold to advantage owing to the rise in the gold price of silver in that year, and to an importation of Japanese yens and Maria Theresa dollars also shipped to India as a speculation to take advantage of the open mints and the rise in the price of silver. Ordinarily the bulk of the imports consists of the three kinds specified above—bar, sycee, and Mexican dollars.

CHAPTER VII.

Shipping.

The shipping returns, as was to be expected, are as unfavourable as the trade returns. A smaller number of vessels entered and cleared, the aggregate tonnage and the average tonnage of each vessel was smaller, the proportion of steam tonnage to the whole was smaller, the number of steamers entered was smaller, and the clearances of steamers in ballast were larger.

The total number and tonnage of the shipping, steam and sailing, with cargoes and in ballast, which entered from and cleared to foreign countries during each of the last six years, are as follows:—

Year.	No.	Tons.	Average Tonnage.
1887–88	10,893	7,189,465	660
1888–89	10,485	6,983,332	666
1889–90	10,673	7,315,586	685
1890–91	11,023	7,684,954	697
1891–92	11,158	8,590,651	770
1892–93	10,723	7,692,291	717

Steamer tonnage represented 77 per cent. of the whole. The total number of steamers which entered and cleared was 3,854, with an aggregate burden of 5,927,299 registered tons, the average tonnage of each steamer being 1,538 tons. About 6 per cent. of the steamers which cleared left in ballast.

Of the total of 7,692,291 tons, the entries from and clearances to the United Kingdom were 2,718,651, being less than in 1891–92, but 35·3 per cent. of the total against 33 per cent. in 1891–92. Entries from and clearances to British possessions have also declined from 2,676,044 tons to 2,470,873 tons. There was a large decrease also in the number and tonnage of vessels entered from and cleared to foreign countries:—

——	No.	Tons.
1890–91	2,852	2,243,652
1891–92	3,537	3,064,043
1892–93	3,121	2,502,767

The relative proportions of tonnage entered and cleared were as follows:—

From and to the United Kingdom, about 35·3 per cent. of the whole.
„ „ British Possessions „ 32·1 „ „
„ „ Foreign countries „ 32·6 „ „

The decline in the tonnage of trade with foreign countries was due mainly to restricted intercourse with Belgium, France, Holland, Italy, and Egypt, the last being the consequence of the smaller trade in rice and wheat.

The vessels carrying the trade of India for the most part fly the British flag, the tonnage of vessels sailing under that flag representing 81 per cent., against 83 per per cent. of the whole in 1891–92 and 82·4 per cent. in 1890–91.

The tonnage of vessels under foreign flags was 12·8 per cent. of the whole against 11·3 per cent. in 1891–92.

The proportion of the tonnage of vessels under British Indian registry was not quite 4 per cent. of the whole. These are all sailing vessels of small tonnage.

The total number of vessels under foreign flags which entered and left last year was 1,415 against 1,366 in 1891–92, and 1,206 in 1890–91, their burden aggregating 988,707 tons against 976,848 tons in 1891–92 and 884,684 tons in 1890–91. The principal flags were :—

—	1889–90.		1890–91.		1891–92.		1892–3.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German	138	180,996	167	253,665	203	309,262	260	365,940
Italian	114	177,200	100	159,876	90	167,926	93	151,240
Austrian	100	181,939	93	164,759	98	165,530	103	177,692
French	121	116,404	126	110,714	130	99,773	106	79,194
Norwegian	68	61,877	42	41,516	85	78,201	73	69,482
Arab	620	79,994	496	68,950	529	72,591	559	76,473
American	31	44,043	27	38,391	23	30,914	11	15,110

The continued increase of tonnage under the German flag and the progressive decline of the American flag are conspicuous in this table.

The native craft employed in the foreign trade are slowly but surely disappearing :—

—	No.	Tons.
1890–91	3,523	169,607
1891–92	3,202	171,149
1892–93	3,153	166,404

The shipbuilding industry in India is of the smallest dimensions. The numbers built in the last two years were as follows :—

—	1891–92.				1892–93.	
	Steamers.		Sailing Vessels.		Sailing Vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.
In Bengal	1	80	7	1,034	1	133
In Bombay	—	—	44	1,110	47	1,115
In Sindh	—	—	5	252	5	221
In Madras	—	—	25	670	12	356
In Burma	—	—	4	170	7	316
Total	1	80	85	3,236	72	2,141

SECTION II.—TRANS-FRONTIER TRADE.

CHAPTER VIII.

The trans-frontier trade compares with that of the preceding year as follows :—

—	Imports.	Exports.	Total.
	Rx.	Rx.	Rx.
1891–92	4,249,592	4,067,644	8,317,236
1892–93	3,895,389	3,594,690	7,490,080

The following figures give the trade with each principal country in the last two years. The countries are arranged geographically, proceeding from west to east along the line of frontier :—

	1891–92.	1892–93.		1891–92.	1890–91.
	Rx.	Rx.		Rx.	Rx.
Lus Bela	67,428	68,322	Nepal	3,003,619	2,624,238
Khelat	54,439	77,604	Sikkim	34,714	42,451
Kandahar	995,445	532,085	Bhutan	55,812	42,185
Zhob and Loralai	85,866	59,975	Hill Tipperah	49,680	65,592
Sewestan	162,113	129,472	Western China	150,874	155,686
Kabul	871,759	831,671	Siam	119,815	179,500
Tirah	22,673	22,523	North Shan States	388,626	370,980
Bajaur	182,815	257,176	South Shan States	45,902	222,529
Kashmir	1,312,123	1,020,134	Karenni	228,766	299,610
Ladakh	53,017	53,855	Zimmé	227,393	249,792
Thibet	180,235	158,010			

The largest proportion of the trade (about 31 per cent. of the whole) is carried on over the Punjab frontier with Kabul and Kashmir. Bengal follows with 25 per cent. of the whole, the trade being carried on with Thibet, Nepal, Bhutan, and Sikkim, the bulk of the trade being with Sikkim. Burma comes next with nearly 20 per cent. of the whole, the trade being carried on with Western China, Siam, the Shan States, Karenni, and Zimmé. The trade of the North-Western Provinces, carried on with Thibet and Nepal, is under 13 per cent. of the whole. The trade across the border of Sindh and Baluchistan is as yet relatively insignificant, though it is possible that when the railway is fully utilised by the people across the border there may be a large development of trade. It is impossible to anticipate any material development of the trade passing across the Assam frontier.

The only countries with which anything like considerable trade is at present carried on are Nepal, Kashmir, Kabul, and Kandahar—

Nepal.

	Imports.	Exports.
	Rx.	Rx.
1891–92	1,557,525	1,333,998
1892–93	1,344,937	1,182,167

The effects of the drought of 1891–92, when the import of food-grains from Nepal was prohibited, were felt in the restriction of trade during the year 1892–93. The imports of food-grains were indeed resumed, but they were smaller than the average, and there was a largely reduced import of cattle, fruits, and vegetables, opium, and timber. The timber trade is said to be adversely affected both by State prohibition and by exhaustion of the forests.

All the larger items of the export trade also decreased: cotton yarn and piece goods, metals, petroleum, provisions, spices, sugar, tobacco. A small trade had been created in Indian tea, but not a pound went across the Nepal frontier last year. The trade in salt continues to expand for the reason mentioned in the review for 1891–92.

Kashmir.

	Imports.	Exports.
	Rx.	Rx.
1891–92	596,788	656,467
1892–93	507,329	476,398

The decline in the trade with Kashmir is attributed to the drought and cholera which prevailed in the valley last year, and also to the severity of the winter which kept the routes impracticable much longer than usual.

KABUL.

—	Imports.	Export.
	Rx.	Rx.
1891–92	218,120	653,639
1892–93	220,850	610,501

There was a larger import of fruits and nuts from Kabul, due partly to the occurrence of a very good crop, but probably more to the active intervention of the Amir in the trade. The intervention, however, had the effect of reducing the exports, for the traders found their return to Kabul so retarded that they hurried back without return loads.

The export of Indian tea has not been maintained :—

—	Foreign Tea.	Indian Tea.
	Cwt.	Cwt.
1890–91	4,479	4,429
1891–92	7,003	6,285
1892–93	7,853	3,353

But there is no doubt that much of the decline is a diversion of trade, the tea now being shipped from Bombay up the Persian Gulf instead of passing through Kabul.

The export of sugar is but small and is likely to be smaller, for the Amir has increased the customs duty from Rs. 18 to Rs. 25 the camel load, an increase of 39 per cent., and Russian sugar is actively imported from Russian Turkestan.

KANDAHAR.

—	Imports.	Exports.
	Rx.	Rx.
1891–92	469,254	526,191
1892–93	234,428	297,657

There was a heavy fall in the imports of raw wool and of fruits and nuts (which articles constitute the bulk of the import trade) from Kandahar owing to the order of the Amir prohibiting his subjects from using the railway at Chaman, an order which was enforced through great part of the year.

WESTERN CHINA.

—	Imports.	Exports.
	Rx.	Rx.
1890–91	53,435	108,749
1891–92	46,336	104,538
1892–93	50,532	93,574

This trade with Western China has had to struggle against the exactions of the Chinese officials and against brigands, and it remains unprogressive. It is to be hoped that, with the satisfactory termination of the negotiations for the regulation of commercial intercourse now in progress between the British and Chinese Governments, the trade will increase, and that its progress will be accelerated by the extension of the railway in the direction of the frontier.

SECTION III.—COASTING TRADE.

CHAPTER IX.

The total trade, imports and exports, merchandise and treasure, was in the last ten years :—

	Rx.		Rx.
1883–84	61,461,631	1888–89	60,166,070
1884–85	58,401 555	1889–90	59,211,043
1885–86	57,598,286	1890–91	65,586,392
1886–87	56,165,363	1891–92	67,896,004
1887–88	60,738,634	1892–93	66,097,209

The trade was rather smaller than in the preceding year, but was larger than in any year but that. It is not a quickly increasing trade, for though in some places the transit of commodities by sea increases, in others it is reduced by the expansion of railway communication or by the substitution of direct foreign trade for the receipt of goods imported from some larger port.

Taking the export value, as representing the actual value, the trade of the last four years compares thus in Rx. :—

—	1889–90.	1890–91.	1891–92.	1892–93.
Merchandise (Indian)	20,602,449	22,416,965	23,468,875	23,230,640
„ (foreign)	6,570,235	6,566,577	6,829,130	7,150,335
Treasure	1,651,528	2,236,590	2,727,792	2,080,175

The figures do not include exports of Government stores or treasure.

Indian Merchandise.

The principal articles in the trade are mentioned below, in the order of their importance, and placed against them are their import values in the last four years, that is, the value of the imports into British Indian ports :—

—	1889–90.	1890–91.	1891–92.	1892–93.
	Rx.	Rx.	Rx.	Rx.
1. Grain and pulse	3,623,702	4,494,350	4,641,335	4,117,857
2. Cotton, raw	3,984,187	5,429,809	3,657,586	4,114,713
3. Cotton manufactures, including twist and yarn	1,753,704	2,016,576	2,195,275	2,000,024
4. Jute manufactures	1,231,946	1,525,141	1,800,649	1,526,056
5. Spices	1,384,095	1,314,806	1,248,503	1,338,890
6. Seeds	976,335	1,163,681	1,180,536	1,156,905
7. Provisions	719,810	817,548	830,881	942,234
8. Salt	738,652	905,368	945,242	927,690
9. Teak timber	850,828	943,323	789,746	821,464
10. Cocoa-nuts and kernel	721,496	748,529	999,269	775,371
11. Tobacco	459,407	500,590	650,666	727,963
12. Jute, raw	1,164,136	918,360	761,091	677,272
13. Sugar	653,662	619,936	634,724	644,328
14. Oils	630,862	624,895	731,126	623,705
15. Coffee	371,303	356,608	420,640	557,420
16. Hides and skins	470,841	460,214	514,173	556,896
17. Spirits	347,015	342,347	397,733	400,972
18. Timber and wood, other than teak	420,692	405,808	394,134	380,086
19. Coal	104,046	148,858	192,001	269,104
20. Tea	132,628	112,508	253,820	128,218

There are no particular features in the trade calling for special remark except perhaps the increasing trade in coal. The exports of Bengal coal from that province to other provinces, although still very small, have increased rapidly in the last few years :—

	Tons.		Tons.
1888–89	41,145	1891–92	123,087
1889–90	53,052	1892–93	195,760
1890–91	105,721		

The coal now goes to Burma, Madras, and Bombay, to which province 50,330 tons were sent last year, in competition with English coal. Bombay is now the only Indian province which still largely consumes English coal.

The reduction in the trade in tea is the result of the decline in the exports of tea to the Persian Gulf from Bombay, to which port the tea is sent coastwise for shipment to the Gulf.

The imports of cotton yarn into Bengal were materially smaller than in 1891–92, only 14,271,000 lbs. against 16,905,000 lbs., but the latter quantity was unusually large. Burma also took a smaller quantity.

The trade in food-grains continued on an extensive scale, owing to the continuance of drought and scarcity in Madras, the imports into that province for the last four years being :—

	Cwt.		Cwt.
1889–90 - -	3,040,011	1891–92 - -	6,328,805
1890–91 - -	5,173,829	1892–93 - -	6,014,376

Coasting Shipping.

The following table gives the number and registered tonnage of the vessels engaged in the coasting trade during the last five years (000's omitted in tonnage) :—

Entered.

——	Steamers.		Sailing Vessels.		Native Craft.	
	No.	Tons.	No.	Tons.	No.	Tons.
1888–89 - -	7,316	7,246	3,241	245	185,659	3,089
1889–90 - -	7,847	7,643	2,959	227	182,155	3,006
1890–91 - -	8,751	8,673	2,565	202	166,113	2,826
1891–92 - - -	8,868	9,161	2,774	217	160,294	2,700
1892–93 - -	8,968	9,371	2,582	232	155,167	2,656

Cleared.

1888–89 - -	7,307	7,213	3,370	252	167,221	2,953
1889–90 - -	7,844	7,617	3,066	233	165,673	2,881
1890–91 - -	8,759	8,717	2,550	193	153,824	2,682
1891–92 - -	8,862	9,099	2,636	196	149,785	2,555
1892–93 - -	8,996	9,409	2,607	241	145,832	2,624

The feature of these tables is the continued increase in the number and tonnage of steamers and the continued decline in sailing vessels and native craft.

J. E. O'CONOR.

Simla,
September 23rd, 1893.

TABLES

RELATING TO

THE FOREIGN SEA-BORNE TRADE

OF

BRITISH INDIA.

TABLES

RELATING TO

THE FOREIGN SEA-BORNE TRADE OF BRITISH INDIA.

NOTE.—*The Values throughout the following Tables represent Tens of Rupees.*

No. 1.

VALUE of the TOTAL TRADE.

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Imports:					
PRIVATE MERCHANDISE	66,570,318	66,560,121	69,034,900	66,587,457	62,605,030
GOVERNMENT STORES	2,870,149	2,637,368	2,940,470	2,844,926	3,660,247
TOTAL MERCHANDISE	69,440,467	69,197,489	71,975,370	69,432,383	66,265,277
TREASURE	13,844,960	17,459,501	21,934,486	14,722,662	17,009,810
TOTAL IMPORTS	83,285,427	86,656,990	93,909,856	84,155,045	83,275,087
Exports:					
PRIVATE MERCHANDISE:					
INDIAN PRODUCE AND MANUFACTURES	92,642,734	99,101,054	95,902,193	103,550,831	101,945,707
FOREIGN DITTO	4,335,437	4,295,808	4,233,529	4,485,179	4,590,290
GOVERNMENT STORES	71,361	63,536	91,626	137,582	59,478
TOTAL MERCHANDISE	97,049,532	103,460,398	100,227,348	108,173,592	106,595,475
TREASURE	1,784,347	1,906,322	2,123,178	3,286,686	6,958,924
TOTAL EXPORTS	98,833,879	105,366,720	102,350,526	111,460,278	113,554,399
Total Trade	182,119,306	192,023,710	196,260,382	195,615,323	196,829,486

No. 2.

VALUE of TOTAL TRADE, distinguishing the PROPORTION passing through the SUEZ CANAL.

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Imports:					
MERCHANDISE:					
VIÂ SUEZ CANAL	58,154,531	56,516,593	60,110,342	57,523,489	54,939,322
„ OTHER ROUTES	11,285,936	12,680,896	11,865,028	11,908,894	11,325,955
TOTAL	69,440,467	69,197,489	71,975,370	69,432,383	66,265,277
PER-CENTAGE VIÂ SUEZ CANAL	83·75	81·68	83·51	82·84	82·90
TREASURE:					
VIÂ SUEZ CANAL	8,537,488	12,754,113	12,752,226	8,571,942	13,632,494
„ OTHER ROUTES	5,307,472	4,705,388	9,182,260	6,150,720	3,377,316
TOTAL	13,844,960	17,459,501	21,934,486	14,722,662	17,009,810
PER-CENTAGE VIÂ SUEZ CANAL	61·66	73·05	58·13	58·22	86·02
Exports:					
MERCHANDISE:					
VIÂ SUEZ CANAL	57,133,271	60,792,741	58,429,936	67,330,576	63,195,652
„ OTHER ROUTES	39,916,261	42,667,657	41,797,412	40,843,016	43,399,823
TOTAL	97,049,532	103,460,398	100,227,348	108,173,592	106,595,475
PER-CENTAGE VIÂ SUEZ CANAL	58·87	58·76	58·29	62·24	59·28
TREASURE:					
VIÂ SUEZ CANAL	368,616	547,819	897,579	1,822,960	4,770,945
„ OTHER ROUTES	1,415,731	1,358,503	1,225,599	1,463,726	2,187,979
TOTAL	1,784,347	1,906,322	2,123,178	3,286,686	6,958,924
PER-CENTAGE VIÂ SUEZ CANAL	20·68	28·74	42·25	55·46	68·56
Total Trade:					
VIÂ SUEZ CANAL	124,193,906	130,611,266	132,190,083	135,249,003	136,538,413
„ OTHER ROUTES	57,925,400	61,412,444	64,070,299	60,366,320	60,291,073
TOTAL	182,119,306	192,023,710	196,260,382	195,615,323	196,829,486
PER-CENTAGE VIÂ SUEZ CANAL	68·19	68·02	67·35	69·14	69·31

No. 3.

VALUE of IMPORTS of MERCHANDISE from PRINCIPAL COUNTRIES into British India.

COUNTRIES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
UNITED KINGDOM		52,576,440	50,291,140	52,101,868	48,271,400	44,005,841
BRITISH POSSESSIONS :						
Europe :	Gibraltar	7,753	8,957	9,221	14,261	16,325
	Malta	7,232	6,461	7,784	5,386	4,936
Asia :	Aden	141,375	131,136	129,575	126,966	141,933
	Ceylon	554,379	632,119	713,383	669,777	664,757
	China, Hong Kong	1,530,433	2,008,099	1,968,839	2,241,602	2,246,916
	Straits Settlements	2,278,414	2,441,400	2,300,338	2,358,598	2,371,609
Africa :	Cape Colony	461	831	822	1,566	9,631
	Mauritius	1,575,048	1,735,002	1,701,695	1,719,872	1,462,771
	Natal	1,028	703	416	1,674	1,026
America :	Canada	0	325	21	4,341	1,570
Australia (including Tasmania and New Zealand)		294,111	391,732	249,718	287,315	239,450
		6,390,234	7,356,765	7,081,812	7,431,358	7,160,924
FOREIGN COUNTRIES :						
Europe :	Austria	768,386	703,716	832,795	839,407	1,031,939
	Belgium	526,698	873,827	976,759	1,324,027	1,645,470
	Denmark	0	0	0	0	287
	France	914,334	975,647	815,824	1,041,679	1,040,291
	Germany	248,016	563,912	1,691,649	1,524,969	1,451,330
	Greece	369	177	130	275	278
	Holland	11,715	9,469	18,739	155,415	206,746
	Italy	504,797	510,508	492,711	535,906	356,307
	Norway	1,793	14,848	26,782	44,956	47,583
	Portugal	319	665	362	587	653
	Russia	50	48	0	15	0
	Spain	609	285	104	541	499
	Sweden	2,175	7,577	3,664	18,921	15,498
	Turkey	1,024	1,990	1,301	833	1,508
Asia :	Arabia	340,093	373,570	290,707	353,297	436,812
	China, Treaty Ports	381,404	441,402	451,456	635,537	595,614
	Japan	23,836	28,127	57,672	65,746	91,210
	Java	3,172	14,551	58,915	144,052	95,689
	Maldive Islands	21,025	19,174	10,168	18,111	11,429
	Mekran and Sonmiani	88,991	106,934	86,139	113,587	112,139
	Persia and Persian Gulf	730,957	803,916	710,182	709,992	687,092
	Philippines	2,959	4,165	4,098	1,725	3,451
	Russia	834,790	741,922	858,968	1,129,129	1,488,623
	Siam	24,742	38,513	30,703	22,280	24,083
	Sumatra	3,989	1,341	111	294	1,186
	Turkey	376,850	440,609	362,046	570,193	477,174
Africa :	Abyssinia	6,312	3,346	5,692	5,985	4,447
	Egypt	78,403	75,898	87,306	91,282	158,995
	Madagascar	3,190	3,410	4,154	5,631	2,945
	Mozambique	73,631	59,755	28,810	26,504	55,981
	Réunion	1,629	141	368	935	11,846
	Zanzibar	568,474	359,806	412,673	291,723	228,307
America :	South America	33	1,243	1,448	2,099	8,549
	United States	1,040,318	1,729,156	1,522,365	1,199,458	1,134,438
	West Indies *	36	0	295	0	4
Other countries		18,525	2,568	6,124	9,608	9,862
		7,603,644	8,912,216	9,851,220	10,884,699	11,438,265
TOTAL IMPORTS		66,570,318	66,560,121	69,034,900	66,587,457	62,605,030

* British and Foreign Possessions are not shown separately for the West Indies.

No. 4.

VALUE of EXPORTS of INDIAN PRODUCE and MANUFACTURES to PRINCIPAL COUNTRIES from British India.

COUNTRIES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
UNITED KINGDOM		36,250,572	37,950,864	31,691,797	33,446,985	32,267,196
BRITISH POSSESSIONS :						
Europe	Gibraltar	73,233	64,096	28,270	19,654	149,492
	Malta	378,068	307,713	713,913	625,482	84,344
Asia :	Aden	688,939	749,769	738,727	678,689	794,959
	Ceylon	1,933,056	2,195,241	2,525,790	2,769,883	3,147,103
	China, Hong Kong	10,854,944	10,686,691	9,484,374	9,099,480	9,110,278
	Straits Settlements	4,072,307	4,536,746	5,499,505	4,997,769	4,440,526
Africa :	Cape Colony	155,333	184,981	129,757	202,497	226,044
	Mauritius	683,511	1,015,581	1,093,212	1,158,437	999,088
	Natal	122,348	217,091	126,490	216,759	117,905
	St. Helena	15,270	8,416	981	60	0
America :	Canada	927	21,699	26,224	52,840	37,477
Australia (including Tasmania and New Zealand)		1,088,250	1,063,489	1,219,037	967,739	1,106,806
		20,066,186	21,051,513	21,586,280	20,789,289	20,274,022
FOREIGN COUNTRIES :						
Europe :	Austria	3,040,638	2,960,484	2,745,479	2,174,645	2,606,846
	Belgium	4,663,800	5,641,048	4,648,609	5,460,273	4,414,066
	France	8,410,444	7,714,867	7,842,268	10,945,575	9,083,254
	Germany	1,493,279	2,764,657	4,387,482	5,073,527	6,517,185
	Greece	17,482	10,698	11,931	15,149	9,433
	Holland	337,137	358,705	409,788	932,071	670,433
	Italy	3,470,113	4,217,755	3,627,870	2,985,457	3,641,156
	Norway	950	0	0	0	0
	Portugal	2,668	12,094	24,587	22,314	18,900
	Russia	535,760	412,414	336,950	240,759	682,869
	Spain	310,675	342,979	410,835	227,126	476,412
	Sweden	12,995	16,155	25,190	19,315	15,767
	Turkey	6,407	17,144	22,546	13,609	54,750
Asia :	Arabia	677,905	825,146	734,646	644,498	833,799
	China, Treaty Ports	3,169,613	3,114,786	4,811,560	4,612,403	5,291,993
	Japan	1,035,305	1,218,998	1,210,276	1,289,787	1,610,455
	Java	25,291	31,729	34,122	62,728	82,341
	Maldive Islands	30,675	25,713	16,629	23,326	14,201
	Mekran and Sonmiani	33,701	40,288	49,345	50,010	51,128
	Persia and Persian Gulf	303,748	497,102	420,986	594,829	508,603
	Philippines	755	3,690	31,266	50,868	21,806
	Siam	89,705	62,154	62,931	41,810	53,031
	Sumatra	1,312	672	871	1,437	1,320
	Turkey	289,808	298,814	332,264	467,849	438,205
Africa :	Abyssinia	35,526	121,637	257,628	244,345	242,158
	Egypt	3,483,800	3,869,974	4,499,097	7,181,460	4,832,053
	Madagascar	4,279	4,193	246	230	2,275
	Mozambique	105,624	128,821	124,363	133,692	171,324
	Réunion	142,213	171,650	227,899	136,695	257,557
	Zanzibar	282,573	416,830	365,525	412,428	400,232
America :	South America	495,186	782,892	730,153	996,418	1,368,911
	United States	3,589,255	3,736,324	3,968,735	3,872,593	4,512,988
	West Indies*	122,544	131,978	166,550	266,895	221,919
Other countries		105,565	146,286	85,489	120,436	297,118
		36,325,976	40,098,677	42,624,116	49,314,557	49,404,488
TOTAL EXPORTS		92,642,734	99,101,054	95,902,193	103,550,831	101,945,706

* See note on p. 53.

No. 5.

VALUE of EXPORTS of FOREIGN (including BRITISH and COLONIAL) MERCHANDISE to PRINCIPAL COUNTRIES from British India.

COUNTRIES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
UNITED KINGDOM	1,222,362	1,178,757	1,063,391	1,094,027	1,044,101
BRITISH POSSESSIONS :					
Europe: Gibraltar	290	85	1,118	3,509	6,750
Malta	6,157	5,757	7,156	6,637	5,755
Asia: Aden	187,454	132,025	148,834	146,480	179,158
Ceylon	123,414	118,986	142,547	155,880	137,885
China, Hong Kong	122,867	133,145	138,949	105,420	144,131
Straits Settlements	300,149	271,830	259,759	246,399	308,624
Africa: Cape Colony	1,200	4,221	455	894	2,804
Mauritius	112,102	110,901	75,890	102,605	143,719
Natal	30,092	29,219	8,345	18,380	19,368
St. Helena	0	0	100	0	0
America: Canada	150	0	2	1	0
Australia (including Tasmania and New Zealand)	8,233	8,710	7,850	6,359	10,972
	892,108	814,879	786,005	792,564	959,166
FOREIGN COUNTRIES :					
Europe: Austria	7,557	11,754	4,403	6,051	4,500
Belgium	3,863	3,314	3,726	5,985	14,947
France	59,459	31,386	37,001	22,030	18,736
Germany	12,224	17,654	7,615	17,638	10,885
Greece	448	263	207	367	308
Holland	41	0	90	0	425
Italy	29,659	39,432	11,260	18,945	26,230
Portugal		0	0	0	0
Russia		0	76	0	150
Spain	0	111	0	0	0
Sweden	0	32	0	48	30
Turkey	2,424	755	1,107	807	1,987
Asia: Arabia	306,174	222,214	243,255	303,486	315,740
China, Treaty Ports	3,606	2,099	5,513	6,197	7,064
Japan	2,017	2,953	2,510	5,416	6,916
Java	3,542	5,287	2,727	3,844	6,827
Maldive Islands	8,138	5,203	1,207	2,044	574
Mekran and Sonmiani	24,267	21,997	20,345	35,365	28,842
Persia and Persian Gulf	1,129,063	1,225,603	1,319,957	1,418,522	1,391,184
Philippines	0	701	125	0	1,895
Siam	2,102	1,458	13,946	18,300	5,097
Sumatra	1,490	6,679	5,007	4,157	5,371
Turkey	277,514	253,424	237,651	314,211	288,179
Africa: Abyssinia	10,305	7,232	17,545	16,394	15,492
Egypt	26,150	30,532	44,505	38,198	37,740
Madagascar	10,555	6,126	0	190	458
Mozambique	92,033	106,539	119,859	127,184	135,259
Réunion	0	182	59	78	232
Zanzibar	185,092	265,310	270,893	224,411	242,617
America: South America	334	251	407	395	360
United States	23,827	32,415	12,892	7,156	14,853
West Indies*	94	104	126	401	107
Other countries	989	1,162	119	768	4,018
	2,220,967	2,302,172	2,384,133	2,598,588	2,587,023
TOTAL EXPORTS	4,335,437	4,295,808	4,233,529	4,485,179	4,590,290

* See note on p. 53.

No. 6.

Quantity* of Imports of Principal Articles into British India.

ARTICLES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
I.—Animals, Living:						
Horses	No.	7,483	6,478	7,578	8,222	7,974
Other sorts	„	2,080	3,099	2,252	3,193	3,390
Total Number of Animals, Living	„	9,563	9,577	9,830	11,415	11,364
II.—Articles of Food and Drink:						
Coffee	Cwt.	25,332	23,976	12,088	26,258	11,336
Fruits and Vegetables:						
Fruits:						
Cocoanuts	No.	17,707,801	13,254,649	13,404,395	17,985,605	14,899,813
„ Kernel or Copra	Cwt.	199,861	154,853	109,685	59,047	56,527
Other sorts		—	—	—	—	—
Vegetables, fresh		—	—	—	—	—
Grain and Pulse:						
Gram	Cwt.	1,600	1,921	1,810	1,681	1,807
Pulse	„	24,933	39,319	23,533	20,388	29,486
Rice in the husk	„	8,319	15,524	13,211	5,265	9,148
„ not in the husk	„	3,759	29,550	3,382	2,963	5,954
Wheat	„	106,680	102,558	124,135	345,912	102,523
Other sorts	„	181,467	103,604	65,298	139,916	152,206
	„	326,758	292,476	231,369	516,125	301,124
Hops	Cwt.	5,434	4,672	3,920	4,064	3,569
Liquors:						
Ale, Beer, and Porter	Gals.	2,398,580	2,797,965	2,785,574	2,973,943	3,052,894
Spirits.						
Brandy	„	351,370	341,358	323,237	256,513	267,665
Gin	„	97,783	87,636	70,267	76,447	102,860
Rum	„	48,316	38,885	27,402	15,968	14,314
Whisky	„	367,361	386,337	388,637	417,619	440,691
Other sorts	„	254,537	246,198	246,441	242,700	231,817
	„	1,119,367	1,100,414	1,055,984	1,010,247	1,057,347
Wines and Liqueurs:						
Champagne	„	48,963	46,604	44,889	46,918	36,809
Claret	„	118,772	113,610	113,866	109,022	91,909
Port	„	76,732	70,168	77,998	79,751	82,953
Sherry	„	44,955	39,846	42,672	41,271	33,336
Other sorts	„	71,126	79,164	82,671	93,080	90,944
	„	360,548	349,392	362,096	370,042	335,951
Liqueurs	„	13,220	13,581	11,587	12,896	12,592
Other sorts	„	4,459	5,848	3,783	2,974	3,342
Total Liquors	„	3,896,174	4,267,200	4,219,024	4,370,102	4,462,126
Provisions:						
Bacon and Hams	Lbs.	689,395	789,704	852,556	903,939	793,095
Biche de mer	„	5,346	2,243	34,501	18,492	18,181
Butter	„	313,772	297,473	382,037	290,454	315,278
Cheese	„	723,939	735,072	815,333	788,442	790,231
Fishmaws and Sharkfins	„	1,261,365	1,500,207	1,512,625	1,416,995	1,578,276
Flour	„	1,605,772	2,061,528	1,526,114	1,399,655	1,316,581
Fruits and Vegetables—dried, salted, or preserved:						
Dates	Cwt.	765,726	848,820	647,819	887,001	839,682
Other sorts	„	95,086	105,715	97,930	106,842	103,058
Ghee	Lbs.	2,731,280	2,763,429	1,128,630	3,450,748	2,296,936
Fish, salted	„	19,780,445	17,974,179	15,039,296	19,345,703	18,129,876
„ not salted, dried	„		1,361,122	1,949,927	1,560,330	4,822,134
„ wet salted (*ngapi*)	„	†	†	†	†	13,821,584
Other sorts	Cwt.	189,081	179,333	190,030	188,642	207,817

* The mark — denotes that the quantities are not stated, on account of their being given under different denominations, or for other reasons; while the mark 0 signifies that there was no import or export at all, as the case may be, of the article in question.

† Not separately enumerated.

No. 7.

Value of Imports of Principal Articles into British India.

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
I.—Animals, Living:					
Horses	290,372	231,400	286,783	278,107	289,305
Other sorts	4,928	8,309	8,647	15,150	11,368
Total Value of Animals, Living	295,300	239,709	295,430	293,257	300,673
II.—Articles of Food and Drink:					
Coffee	102,484	125,232	62,822	144,076	63,949
Fruits and Vegetables:					
Fruits:					
Cocoanuts	69,676	57,555	63,847	65,149	67,775
„ Kernel or Copra	175,336	137,455	102,606	55,546	54,175
Other sorts	24,763	21,733	11,409	11,396	16,041
Vegetables, fresh	1,520	1,209	1,029	2,164	5,561
	271,295	217,952	178,891	134,255	143,552
Grain and Pulse:					
Gram	845	951	948	881	1,008
Pulse	10,557	16,134	9,574	8,968	12,538
Rice in the husk	2,641	5,438	5,110	1,627	3,175
„ not in the husk	1,760	13,739	1,685	1,370	3,953
Wheat	43,993	43,785	53,182	152,774	46,873
Other sorts	56,420	35,070	22,984	49,970	54,812
	116,216	115,117	93,483	215,590	122,359
Hops	59,473	36,978	76,927	38,682	42,246
Liquors:					
Ale, Beer, and Porter	412,852	462,110	419,772	445,142	454,571
Spirits:					
Brandy	256,408	226,354	226,345	172,577	193,743
Gin	39,984	32,854	27,248	28,029	38,163
Rum	10,308	8,232	7,246	4,751	5,266
Whisky	289,272	266,508	261,788	286,246	296,103
Other sorts	134,055	139,794	142,517	164,003	148,384
	730,027	673,742	665,144	655,606	681,659
Wines and Liqueurs:					
Champagne	114,236	108,601	112,541	115,307	95,791
Claret	61,400	61,175	56,451	56,708	46,783
Port	60,486	52,728	59,016	59,252	65,997
Sherry	35,325	32,381	33,128	31,120	25,949
Other sorts	52,288	55,913	58,703	60,136	59,632
	323,735	310,798	319,839	322,523	294,152
Liqueurs	16,378	16,039	16,915	17,050	15,224
Other sorts	2,217	2,456	1,791	1,774	1,657
Total Liquors	1,485,209	1,465,145	1,423,461	1,442,095	1,447,263
Provisions:					
Bacon and Hams	49,915	56,609	57,533	58,229	55,130
Biche de mer	624	125	1,131	844	861
Butter	30,069	29,728	36,850	28,973	32,727
Cheese	48,373	46,015	46,844	48,727	49,370
Fishmaws and Sharkfins	40,470	48,247	45,276	47,087	48,001
Flour	15,706	18,147	12,764	12,894	13,318
Fruits and Vegetables—dried, salted, or preserved:					
Dates	343,247	374,016	310,910	420,232	407,793
Other sorts	126,352	149,403	126,313	162,454	154,739
Ghee	101,346	103,757	41,330	122,235	95,539
Fish, salted	206,955	164,004	151,996	181,217	180,849
„ dried, not salted		6,512	8,310	11,479	35,589
„ wet, salted (*ngapi*)	*	*	*	*	71,589
Other sorts	625,036	600,002	636,813	677,422	716,550
	1,588,103	1,596,565	1,476,070	1,771,793	1,862,055

* Not separately enumerated.

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1888–89.	1889–90.	1890–91	1891–92.	1892–93.
II.—ARTICLES OF FOOD AND DRINK—*cont.*						
Salt	Tons	398,810	410,808	395,243	373,953	360,042
Spices:						
Betelnuts	Lbs.	40,371,229	39,520,007	35,739,467	40,468,003	34,551,477
Cardamoms	,,	124,714	278,114	240,981	273,264	185,869
Cassia	,,	30,564	105,584	52,416	149,755	85,064
Chillies	,,	0	0	0	44,472	104,148
Cinnamon	,,	11,352	41,876	27,730	20,908	16,856
Cloves	,,	7,240,043	6,355,839	7,454,825	5,744,817	4,894,581
Ginger	,,	199,831	204,631	218,116	481,438	423,925
Nutmegs	,,	531,427	400,954	566,901	447,856	565,158
Pepper	,,	2,805,288	5,707,147	7,114,551	10,598,416	7,353,432
Other sorts	,,	474,397	216,667	222,182	314,629	366,113
	,,	51,788,845	52,830,819	51,637,169	58,543,558	48,546,623
Sugar:						
Refined or crystallised, including sugarcandy	Cwt.	1,450,481	1,623,621	2,734,491	2,068,985	1,847,916
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	,,	167,229	99,492	197,410	144,140	111,902
	,,	1,617,710	1,723,113	2,931,901	2,213,125	1,959,818
Tea	Lbs.	4,767,004	5,382,851	4,770,008	6,353,017	6,022,883
Other articles	Cwt.	152	135	47	1	97
III.—METALS AND MANUFACTURES OF:						
Metals:						
Brass:						
Unwrought	Cwt.	231	302	81	78	158
Wrought	,,	9,916	11,737	12,755	10,933	12,330
	,,	10,147	12,039	12,836	11,011	12,488
Copper:						
Old, for re-manufacture	Cwt.	922	1,315	442	1,032	1,744
Unwrought:						
Tiles, Ingots, Cakes, and Bricks	,,	3,462	107,890	60,016	74,004	11,949
Other sorts	,,	23,511	79,910	51,116	82,877	42,610
Wrought:						
Lametta	,,	1,860	2,193	2,858	2,701	2,878
Mixed or Yellow Metal, for sheathing	,,	58,850	192,446	191,901	185,538	205,401
Sheets and other manufactures	,,	9,885	185,161	140,115	164,936	156,180
		98,490	568,915	446,448	511,088	420,762
Iron:						
Old for re-manufacture	Cwt.	7,279	6,967	8,106	8,886	15,949
Cast (pig)	,,	138,542	116,305	104,642	183,785	148,437
Wrought:						
Anchors, Cables, and Kentledge	,,	25,957	22,306	24,370	27,430	20,551
Bar	,,	1,235,844	944,233	1,191,480	965,766	942,558
Angle, Bolt, and Rod	,,	442,160	449,077	395,491	512,227	409,079
Sheets and Plates (including tinned plates)	,,	486,655	534,801	490,795	476,626	489,964
Galvanised (other than wire)	,,	360,603	361,610	478,605	387,786	577,057
Hoops	,,	111,589	101,325	129,835	106,926	91,959
Nails, Screws, and Rivets	,,	144,064	98,830	146,552	139,620	142,598
Wire	,,	11,616	11,370	17,939	10,289	16,238
Beams, Pillars, Girders, and Bridge-work	,,	455,768	343,642	260,343	334,500	259,329
Pipes and Tubes	,,	444,760	462,085	460,196	389,301	357,102
Rice-bowls	,,	61,848	65,040	76,688	48,122	59,787
Other manufactures of wrought or cast iron, or of iron mixed with steel	,,	76,108	90,814	91,514	89,225	65,631
	,,	4,002,793	3,608,405	3,876,556	3,680,489	3,596 239

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
II.—ARTICLES OF FOOD AND DRINK—*cont.*					
Salt	882,130	894,532	779,034	627,953	576,694
Spices:					
Betelnuts	382,014	371,697	374,773	374,471	301,729
Cardamoms	18,163	35,083	32,324	32,943	22,502
Cassia	649	1,911	931	2,659	1,384
Chillies	0	0	0	340	1,018
Cinnamon	180	693	1,177	298	311
Cloves	287,890	193,628	171,504	104,686	85,118
Ginger	1,527	1,164	1,244	4,455	6,284
Nutmegs	36,109	28,226	42,523	34,525	45,811
Pepper	105,508	200,485	167,315	220,614	134,953
Other sorts	23,193	19,463	21,324	22,205	24,523
	855,228	852,350	813,115	797,196	623,633
Sugar:					
Refined or crystallised, including sugarcandy	1,741,264	2,169,105	3,326,850	2,516,804	2,591,816
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	49,675	30,944	73,036	45,192	33,867
	1,790,939	2,200,049	3,399,886	2,561,996	2,625,683
Tea	317,937	363,681	325,141	443,161	443,336
Other articles	72	65	22	0	49
Total Value of Articles of Food and Drink	7,469,086	7,867,666	8,628,852	8,176,797	7,950,819
III.—METALS AND MANUFACTURES OF:					
Metals:					
Brass:					
Unwrought	657	900	260	255	668
Wrought	54,598	70,765	78,676	64,166	70,708
	55,255	71,665	78,936	64,421	71,376
Copper:					
Old, for re-manufacture	3,475	4,485	1,493	3,221	4,863
Unwrought:					
Tiles, Ingots, Cakes, and Bricks	19,975	399,815	244,470	285,064	45,781
Other sorts	129,409	286,846	203,205	315,938	165,277
Wrought:					
Lametta	44,392	46,864	57,512	55,827	57,908
Mixed or Yellow Metal, for sheathing	295,557	782,436	709,015	706,594	792,739
Sheets and other manufactures	70,505	751,908	597,896	722,380	702,189
	563,313	2,222,354	1,813,591	2,089,024	1,768,757
Iron:					
Old, for re-manufacture	1,657	1,514	1,772	1,705	3,172
Cast (pig)	34,772	30,712	29,114	45,221	37,658
Wrought:					
Anchors, Cables, and Kentledge	28,960	28,461	28,570	34,870	22,896
Bar	634,369	516,840	618,916	478,708	486,355
Angle, Bolt, and Rod	216,754	247,354	212,099	261,720	217,077
Sheets and Plates (including tinned plates)	307,464	371,586	321,980	302,619	316,852
Galvanised (other than wire)	364,691	400,007	486,122	390,499	614,844
Hoops	64,503	65,271	81,936	63,755	58,893
Nails, Screws, and Rivets	144,495	108,487	162,100	151,219	162,003
Wire	12,069	12,754	20,575	10,514	17,769
Beams, Pillars, Girders, and Bridge-work	334,027	255,538	198,213	244,063	176,543
Pipes and Tubes	230,469	228,222	258,183	212,626	184,549
Rice-bowls	49,991	52,886	61,988	38,840	52,467
Other manufactures of wrought or cast iron, or of iron mixed with steel	90,958	94,685	80,739	77,924	72,356
	2,515,179	2,414,317	2,562,307	2,321,283	2,423,434

No. 6—*continued.*

Quantity of Imports of Principal Articles into British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
III.—Metals and Manufactures of—*cont.*						
Metals—*cont.*						
Lead:						
Ore	Cwt.	4,296	4,566	3,135	3,089	4,691
Pig	„	23,163	19,108	12,902	21,856	17,707
Wrought:						
Sheets for tea chests	„	66,415	66,660	69,891	76,908	72,787
Sheets, Pipes, and Tubes	„	6,848	6,024	6,586	10,697	7,968
Other sorts	„	12,378	9,068	10,515	10,018	9,923
Other sorts	„	30	7	10	0	0
	„	113,130	105,433	103,039	122,568	113,076
Quicksilver	Lbs.	232,991	306,923	307,110	280,689	359,039
Steel:						
Cast	Cwt.	32,210	26,156	17,109	17,328	12,407
Hoop	„	137,108	207,581	236,024	171,266	115,958
Other sorts	„	373,070	234,659	452,332	584,442	493,191
	„	542,388	468,396	705,465	773,036	621,556
Tin:						
Unwrought (block)	„	33,169	39,753	41,269	38,248	37,449
Wrought (including plates or sheets, not tinned iron)	„	524	88	715	582	154
	„	33,693	39,841	41,984	38,830	37,603
Zinc or Spelter:						
Unwrought	„	48,581	69,795	96,119	102,827	97,803
Wrought or manufactured	„	16,120	14,077	15,793	15,776	17,733
Other sorts	„	5	17	32	248	246
	„	64,706	83,889	111,944	118,851	115,782
Unenumerated	„	3,930	8,585	9,334	5,713	5,164
Total Metals	„	4,871,357	4,898,243	5,310,348	5,264,092	4,925,876
Hardware and Cutlery (including plated ware)		—	—	—	—	—
Machinery and Millwork:						
Steam-engines and parts:						
Locomotives (excluding those for Railways)		—	—	—	—	—
Other sorts		—	—	—	—	—
Agricultural (not being steam)		—	—	—	—	—
Other sorts		—	—	—	—	—
Railway Plant and Rolling-stock:						
Locomotive Engines and Tenders		—	—	—	—	—
Carriages and Trucks		—	—	—	—	—
Materials for Construction:						
Steel rails and fish plates	Cwt.	0	0	1,043,525	755,897	615,211
Sleepers and keys of steel and cast iron	„	0	0	1,099,449	428,518	526,063
Other sorts	„	3,853,958	3,624,479	358,478	309,241	220,904
IV.—Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials:						
Chemicals:						
Alum	Cwt.	51,155	77,011	71,896	74,203	63,677
Arsenic	„	733	1,326	1,171	1,114	1,292
Bicarbonate of soda	„	*	*	*	*	25,947
Chemicals for paper-making		—	—	—	—	—
Copperas	Cwt.	16,007	21,281	25,247	23,609	17,873
Sal Ammoniac	„	2,611	6,023	3,866	3,294	3,870
Sulphur (Brimstone)	„	21,233	28,167	21,231	25,388	29,275
Sulphuric Acid	„	18,530	12,209	23,390	13,827	21,983
Other sorts	„	—	—	—	—	—

* Not separately enumerated.

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
III.—METALS AND MANUFACTURES OF—*cont.*					
Metals—*cont.*					
Lead:					
Ore	5,088	5,396	3,529	3,399	5,853
Pig	25,477	20,147	13,106	21,663	16,251
Wrought:					
Sheets for tea chests	101,145	106,548	107,073	117,977	111,119
Sheets, Pipes, and Tubes	8,244	7,594	8,700	13,166	8,481
Other sorts	18,857	13,797	15,484	14,703	14,003
Other sorts	52	8	14	0	0
	158,863	153,490	147,906	170,908	155,707
Quicksilver	36,869	54,243	54,548	43,645	53,875
Steel:					
Cast	31,352	24,130	21,768	22,489	19,676
Hoop	84,165	141,451	157,754	104,615	77,092
Other sorts	229,072	162,859	292,665	332,421	288,416
	344,589	328,440	472,187	459,525	385,184
Tin:					
Unwrought (block)	254,650	283,917	277,208	263,280	295,579
Wrought (including plates or sheets, not tinned iron)	895	636	1,094	1,051	455
	255,545	284,553	278,302	264,331	296,034
Zinc or Spelter:					
Unwrought	55,383	87,193	145,440	159,290	148,398
Wrought or manufactured	29,120	26,274	31,938	32,696	36,836
Other sorts	11	10	57	628	643
	84,514	113,477	177,435	192,614	185,877
Unenumerated	39,886	63,448	60,935	49,322	41,774
Total Metals	4,054,013	5,705,987	5,646,147	5,655,073	5,382,018
Hardware and Cutlery (including plated ware)	1,102,205	1,096,191	1,197,614	1,238,994	1,217,754
Machinery and Millwork:					
Steam-engines and parts:					
Locomotives (excluding those for Railways)	0	1,100	3,727	1,556	2,888
Other sorts	1,303,900	1,532,122	1,102,163	1,063,636	1,359,595
Agricultural (not being steam)	64,139	55,257	61,675	128,214	141,012
Other sorts	948,832	846,906	896,298	918,191	855,607
	2,316,871	2,435,385	2,063,863	2,111,597	2,359,103
Railway Plant and Rolling-stock:					
Locomotive Engines and Tenders	390,112	145,973	260,876	397,822	155,068
Carriages and Trucks	629,010	285,998	573,727	460,350	325,017
Materials for Construction:					
Steel rails and fish-plates	0	0	464,521	283,172	223,220
Sleepers and keys of steel and cast iron	0	0	411,548	150,542	190,908
Other sorts	1,474,117	1,389,366	291,181	192,287	138,726
	2,493,239	1,821,337	2,001,853	1,484,173	1,032,939
Total Value of Metals and Manufactures of	9,966,328	11,058,900	10,909,477	10,489,837	9,991,814
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
Chemicals:					
Alum	21,104	32,399	29,439	30,500	28,884
Arsenic	1,287	2,428	1,901	1,992	2,307
Bicarbonate of soda	*	*	*	*	14,425
Chemicals for paper-making	*	*	*	*	53,307
Copperas	5,591	7,977	10,795	7,443	6,185
Sal Ammoniac	6,788	16,175	9,629	8,467	10,725
Sulphur (Brimstone)	10,838	14,743	10,781	15,590	17,050
Sulphuric Acid	22,554	15,778	29,290	18,475	29,137
Other sorts	137,058	156,261	162,315	203,941	145,629
	205,220	245,761	254,150	286,408	307,649

* Not separately enumerated.

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont.*						
Drugs, Medicines and Narcotics:						
Aloes	Cwt.	864	1,049	383	1,499	577
Asafœtida	„	9,513	9,226	6,747	6,298	5,913
Camphor:						
Bhimsaini or Baras	Lbs.	322	453	637	884	949
Other sorts	„	1,892,065	1,266,585	1,370,232	1,502,541	1,299,431
Cassia liguea	Cwt.	21,813	24,064	26,254	22,728	26,054
Galangal	„	2,247	2,324	3,263	2,845	5,652
Quinine	Lbs.	24,059	15,119	30,498	30,436	32,158
Other sorts		—	—	—	—	—
Opium	Lbs.	254	238	272	340	248
Tobacco:						
Unmanufactured	Lbs.	481,693	449,644	449,805	479,401	912,537
Manufactured:						
Cigars	„	61,008	60,987	59,809	69,232	78,815
Other sorts	„	1,257,934	983,935	1,267,401	1,275,887	1,276,689
		1,800,635	1,494,566	1,777,015	1,824,520	2,268,041
Dyeing and Tanning Materials:						
Aniline and Alizarine Dyes	Oz.	52,738,826	57,681,958	61,722,364	89,474,482	94,781,836
Cochineal	Cwt.	2,108	2,199	2,293	2,147	2,132
Cutch	„	44	18	9	55	36
Gambier	„	16,395	14,652	18,780	17,961	17,567
Indigo	„	1,390	1,601	902	1,294	801
Madder or Munjeet	„	5,394	2,646	6,309	1,454	1,210
Myrabolams	„	4,096	3,570	1,949	9,029	7,813
Saffron	„	247	319	331	339	271
Other sorts	„	16,305	16,067	14,427	14,854	19,435
V.—OILS:						
Oils:						
Animal	Gals.	37,929	34,969	84,960	97,901	69,348
Essential	„	2,826	2,756	4,413	5,411	7,019
Mineral:						
Kerosine	„	38,285,559	51,839,400	52,561,297	55,508,063	64,409,305
Other sorts	„	1,666,326	1,550,758	1,673,978	2,601,220	2,676,663
Vegetable, not Essential:						
Cocoa-nut	Gals.	711,056	843,597	1,516,509	1,458,909	1,274,983
Earth-nut	„	449,954	8,058	28,433	12,376	47,436
Linseed	„	386,799	285,292	278,424	333,553	224,041
Other sorts	„	12,914	22,439	17,107	38,489	8,969
	& Cwt.	25	6	2	0	0
Total Quantity of Oils	Gals.	41,553,363	54,587,269	56,165,121	60,055,922	68,717,764
	& Cwt.	25	6	2	0	
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:						
Canes and Rattans	Cwt.	19,038	24,675	18,815	24,903	24,271
Caoutchouc, raw	„	53	84	28	0	0
Coal:						
Coal	Tons.	810,465	572,791	767,632	724,195	634,749
Coke	„	11,732	9,765	9,339	12,766	12,536
Patent fuel	„	11,281	19,114	7,693	10	900
Coir, unmanufactured	Cwt.	367	577	112	656	252
Cotton, raw:						
Asiatic	„	63,070	115,362	80,165	64,123	58,920
Other than Asiatic	„	1,557	638	4,071	17,135	48,552
Feathers	Lbs.	11,581	1,032	325	210	344
Flax, raw	„	35,840	13,902	29,056	500	140
Gums and Resins						
Arabic	Cwt.	13,020	8,637	6,505	5,245	5,552
Benjamin	„	13,289	12,498	8,825	12,022	10,609
Olibanum or Frankincense	„	23,776	23,220	28,649	24,004	19,747
Rosin	„	19,073	36,305	33,247	45,200	31,575
Other sorts	„	7,020	7,935	6,854	13,841	18,922
Hemp raw	„	9,223	7,609	9,788	12,413	9,334

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS —*cont.*					
Drugs, Medicines and Narcotics:					
Aloes	1,901	2,454	824	4,358	1,788
Asafœtida	43,178	40,229	37,163	28,620	26,498
Camphor:					
Bhimsaini or Barss	1,508	1,871	1,929	3,071	2,588
Other sorts	101,560	81,663	132,851	120,940	118,606
Cassia lignea	31,979	35,265	38,107	32,488	40,719
Galangal	1,326	1,573	1,975	2,048	4,389
Quinine	39,844	21,687	40,728	36,920	38,297
Other sorts	208,632	206,230	226,220	254,424	240,704
Opium	412	398	513	486	418
Tobacco:					
Unmanufactured	11,256	11,126	15,363	18,551	26,816
Manufactured:					
Cigars	19,494	24,773	25,748	26,570	32,403
Other sorts	108,506	91,817	110,725	121,949	129,589
	139,256	127,716	151,836	167,070	188,808
Dyeing and Tanning Materials:					
Aniline and Alizarine Dyes	278,041	350,654	353,994	458,191	501,921
Cochineal	18,683	18,276	18,948	18,663	23,483
Cutch	55	27	19	114	71
Gambier	36,624	39,346	42,897	36,741	35,915
Indigo	1,983	10,703	1,866	6,118	2,824
Madder or Munjeet	6,427	2,949	6,898	1,528	1,557
Myrabolams	1,320	991	519	2,950	3,117
Saffron	55,838	75,035	65,673	60,272	52,044
Other sorts	22,014	17,506	20,369	13,806	23,701
	420,985	515,487	511,183	598,383	644,633
Total Value of Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials	1,195,801	1,280,334	1,397,479	1,535,216	1,615,097
V.—OILS:					
Oils:					
Animal	4,101	3,562	8,332	9,885	7,133
Essential	4,700	5,289	7,153	7,460	10,579
Mineral:					
Kerosine	1,767,937	2,386,684	2,262,529	2,200,966	2,515,874
Other sorts	93,343	92,143	99,690	167,175	174,390
Vegetable, not Essential:					
Cocoa-nut	88,125	105,077	200,355	188,687	163,942
Earth-nut	50,142	1,146	4,325	1,845	8,222
Linseed	62,130	47,240	48,499	54,560	37,106
Other sorts	2,347	4,072	3,304	5,377	1,916
Total Value of Oils	2,072,825	2,645,213	2,634,187	2,635,955	2,919,162
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Canes and Rattans	15,511	22,950	17,215	23,768	22,997
Caoutchouc, raw	615	843	417	0	6
Coal:					
Coal	1,843,348	1,224,747	1,490,902	1,213,403	1,101,791
Coke	39,684	33,462	32,673	37,001	37,801
Patent fuel	24,181	50,380	19,867	89	1,858
Coir, unmanufactured	289	337	32	709	186
Cotton, raw:					
Asiatic	146,979	266,754	177,824	121,944	137,222
Other than Asiatic	3,600	2,138	16,860	55,829	124,598
Feathers	361	249	61	14	50
Flax, raw	1,290	474	698	29	3
Gums and Resins:					
Arabic	49,766	20,458	10,615	7,906	9,003
Benjamin	44,543	40,032	29,002	38,225	29,576
Olibanum or Frankincense	27,762	27,360	30,113	26,421	23,656
Rosin	8,420	17,216	15,150	19,648	13,391
Other sorts	18,389	17,569	17,052	23,007	28,746
Hemp, raw	23,886	27,053	26,404	30,277	22,636

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Hides and Skins:					
Hides, raw - No.	40,234	35,240	100,430	34,947	20,939
= Cwt.	3,758	3,583	9,798	2,704	1,673
Skins, raw - No.	328,949	451,839	752,616	855,059	712,100
= Cwt.	8,272	11,258	16,338	19,768	16,400
Horns - - - - „	627	505	611	1,117	430
Ivory, unmanufactured - - - Lbs.	599,690	370,412	534,995	452,550	394,588
Jewellery, &c.:					
Precious Stones and Pearls, unset - -	—	—	—	—	—
Jute, raw - - - - Cwt.	504	1,379	6,007	833	17
Lac, stick - - - - „	1,845	850	142	573	419
Manures - - - - Tons.	70	132	95	459	171
Natural Curiosities - - - -	—	—	—	—	—
Pitch, Tar, and Dammer - - Cwt.	100,116	98,978	129,911	147,172	119,907
Plants, Living - - - -	—	—	—	—	—
Seeds:					
Essential:					
Cummin - - - - Cwt.	2,085	506	1,053	1,028	821
Castor - - - - „	1	4	79	261	17
Linseed - - - - „	4,788	4,510	8,686	6,310	3,141
Mustard - - - - „	1,798	2,377	584	566	31
Poppy - - - - „	1,198	2,191	4,499	30,597	12,026
Rape - - - - - „	5,003	1,048	30,157	11,837	17,212
Til or Jinjili - - - - „	67,845	97,615	74,171	36,484	104,767
Other sorts - - - - „	14,279	11,400	11,362	9,750	8,970
„	96,997	119,651	130,591	96,833	146,985
Shells and Cowries:					
Shells (chanks, large ornamental shells, &c.) - - - No. & Cwt.	4,019,596 / 46	4,956,292 / 25	0 / 28,598	0 / 20,225	0 / 26,114
Tortoise-shell (including nakhla or nakh Lbs.	18,937	17,957	17,476	17,221	23,461
Cowries - - - - „	16,705	19,523	19,446	18,857	31,218
Silk, raw - - - Lbs.	2,045,569	2,360,467	2,406,239	2,701,069	2,292,846
Stone and Marble - - - Cwt.	148,898	389,301	325,213	446,151	718,923
Tallow - - - - - „	2,686	4,993	6,991	7,902	3,385
Wax (excluding candles) - - „	2,016	973	1,072	1,922	1,297
Wood:					
Teak - - - Cubic Tons	3,521	5,562	4,164	3,095	2,708
Other Timber - - - Tons	16,297	13,388	12,350	12,908	11,561
Firewood - - - - „	2,700	2,150	3,913	3,556	3,934
Ornamental:					
Sandal - - - - -	—	—	—	—	—
Ebony - - - -	—	—	—	—	—
Other sorts - - -	—	—	—	—	—
Wool, raw - - - - Lbs.	4,500,219	5,100,556	4,236,826	4,345,439	4,601,921
All other Articles - - - -	—	—	—	—	—
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:					
Yarns and Textile Fabrics:					
Cotton:					
Twist and Yarn - - - Lbs.	52,587,181	46,382,525	50,970,950	50,404,318	38,276,545
Manufactures:					
Piece goods:					
Grey (unbleached) - Yards	1,347,298,683	1,257,001,362	1,280,539,631	1,173,176,482	1,092,584,240
White (bleached) - - - „	406,492,369	339,098,094	373,148,661	361,394,837	376,358,801
Coloured, Printed, or Dyed - „	372,456,754	400,949,291	360,335,370	348,116,680	339,111,153
Handkerchiefs and Shawls in the piece - - - No.	17,679,787	19,415,005	18,896,926	16,428,040	15,481,430
Other sorts - - - Yards	294,917	183,855	439,426	196,361	286,400
Lace and Patent Net - - „	2,061,158	1,678,699	1,871,689	2,218,634	1,881,548
Hosiery, pure and mixed - -	—	—	—	—	—
Thread, sewing - - Lbs.	945,391	839,962	1,164,989	1,121,350	972,962
Canvas - - - - Yards	75,308	70,912	85,310	64,857	70,721
Other sorts - - - Lbs.	1,540,018	1,848,932	1,658,461	1,257,009	1,559,670

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VI. — RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Hides and Skins:					
Hides, raw	9,299	7,880	20,032	6,079	3,218
Skins, raw	25,943	31,332	52,748	68,266	58,867
Horns	7,593	4,477	5,200	7,169	3,594
Ivory, unmanufactured	294,564	210,744	325,380	274,343	234,857
Jewellery, &c.:					
Precious Stones and Pearls, unset	162,451	147,495	129,869	142,364	207,340
Jute, raw	365	927	2,749	99	16
Lac, stick	4,064	1,907	419	1,594	1,057
Manures	282	1,006	572	1,929	773
Natural Curiosities	1,753	2,120	1,115	1,633	1,744
Pitch, Tar, and Dammer	34,273	39,409	50,466	52,189	41,998
Plants, Living	1,556	1,718	2,523	1,265	1,131
Seeds:					
Essential:					
Cummin	3,438	786	1,750	1,668	1,418
Castor	1	3	55	131	10
Linseed	2,923	2,986	5,397	3,786	2,217
Mustard	1,148	1,601	431	414	23
Poppy	846	1,606	3,136	19,136	7,742
Rape	2,894	676	19,193	7,185	10,990
Til or Jinjili	50,951	75,867	57,645	26,340	84,117
Other sorts	26,992	24,836	23,766	21,134	18,510
	89,193	108,361	111,373	79,794	125,027
Shells and Cowries:					
Shells (chanks, large ornamental shells, &c.)	21,911	19,354	29,314	25,085	47,521
Tortoise-shell (including nakhla or nakh)	3,864	4,709	6,720	6,487	8,104
Cowries	6,348	9,180	8,138	8,766	12,655
Silk, raw	905,939	1,067,045	1,115,068	1,264,003	1,016,080
Stone and Marble	34,094	33,238	31,648	34,507	28,846
Tallow	6,062	10,393	10,424	15,379	7,777
Wax (excluding candles)	9,927	3,661	3,651	6,456	4,216
Wood:					
Teak	25,501	37,919	27,975	19,375	18,323
Other Timber	67,023	62,654	54,555	55,181	52,583
Firewood	2,883	2,194	3,778	3,855	3,888
Ornamental:					
Sandal	687	412	1,153	1,121	1,380
Ebony	85	65	17	0	24
Other sorts	4,378	3,702	3,693	5,587	5,926
Wool, raw	124,883	136,744	115,615	118,204	126,204
All other Articles	22,136	24,591	33,684	29,553	37,609
Total Value of Raw Materials and Unmanufactured Articles	4,115,681	3,725,259	4,032,765	3,828,053	3,604,278
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:					
Yarns and Textile Fabrics:					
Cotton:					
Twist and Yarn	3,746,797	3,482,529	3,768,362	3,514,620	2,683,850
Manufactures:					
Piece goods:					
Grey (unbleached)	15,962,476	15,055,190	15,617,703	13,935,798	12,176,730
White (bleached)	5,574,451	4,727,559	5,298,573	4,953,905	4,864,361
Coloured, Printed, or Dyed	5,623,182	6,016,896	5,672,368	5,701,416	5,295,514
Handkerchiefs and Shawls in the piece	214,380	212,253	209,219	169,814	165,275
Other sorts	15,104	8,499	19,120	9,963	12,482
Lace and Patent Net	58,687	48,213	48,157	56,610	52,532
Hosiery, pure and mixed	87,171	73,538	94,480	96,416	110,949
Thread, sewing	139,700	132,785	181,370	166,121	164,405
Canvas	2,724	2,834	3,073	2,363	2,277
Other sorts	86,333	113,632	97,924	82,446	97,490
	27,764,508	26,391,399	27,241,987	25,174,852	22,942,015

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Yarns and Textile Fabrics—*cont.*						
Flax:						
Twist and Yarn	Lbs.	27,676	10,546	30,409	22,799	32,174
Manufactures:						
Piece goods	Yards	990,753	1,371,513	1,489,512	702,448	698,625
Thread, sewing	Lbs.	148,670	111,172	165,966	136,062	169,707
Canvas	Yards	1,361,336	1,354,889	1,573,296	1,261,215	1,427,525
Other sorts (including bags and sacks)	Lbs.	184,194	120,530	176,890	206,287	195,416
Hemp:						
Manufactures (excluding cordage):						
Cloth	Yards	129,629	137,122	173,661	187,181	189,097
Bags and Sacks	No.	20,951	6,423	2,859	1,032	97
Jute:						
Manufactures:						
Gunny Bags	No.	2,382,921	2,673,076	2,607,049	2,775,686	2,900,387
„ Cloths	Yards	353,789	362,126	482,456	12,008	39,574
Canvas	„	0	0	0	912,896	1,114,614
Twist and Yarn	Lbs.	0	0	0	21,966	3,962
Rope and Twine	Cwt.	450	483	170	539	137
Other kinds	„	155	159	1,197	276	727
Silk:						
Manufactures:						
Thread for sewing, &c.	Lbs.	8,163	10,382	9,125	12,968	12,009
Piece goods	Yards	10,952,732	11,426,168	10,032,619	11,790,744	12,558,447
Goods of silk mixed with other materials	„	4,223,332	3,978,949	1,997,677	3,146,107	2,844,631
Other sorts	Lbs.	4,497	7,420	17,081	16,832	34,192
Wool:						
Manufactures:						
Piece goods	Yards	11,864,523	10,215,322	13,110,184	13,838,518	11,465,892
Shawls	No.	663,984	901,511	1,085,727	796,718	653,650
Braids	Lbs.	365,250	274,629	304,710	291,454	273,811
Other sorts	„	1,267,019	1,172,321	1,427,050	1,496,556	1,231,945
Agricultural Implements		—	—	—	—	—
Apparel:						
Apparel (including haberdashery, millinery, &c., but excluding hosiery)		—	—	—	—	—
Boots and Shoes	Pairs	304,597	343,665	385,695	385,388	330,514
Arms, Ammunition, &c. (excluding military accoutrements):						
Fire-arms and parts thereof		—	—	—	—	—
Gunpowder, common	Lbs.	403,525	66,200	186,746	263,125	321,525
„ sporting	„	203,127	175,189	191,080	244,528	188,790
Dynamite and other explosives	Cwt.	4,010	6,682	7,191	5,639	5,047
Other sorts		—	—	—	—	—
Art, works of		—	—	—	—	—
Books and Printed Matter (including maps and charts)	Cwt.	14,790	11,707	15,265	16,053	15,893

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Flax:					
Twist and Yarn	900	265	1,016	1,137	1,132
Manufactures:					
Piece goods	34,885	40,763	43,802	22,370	21,363
Thread, sewing	11,025	9,239	11,530	10,106	12,197
Canvas	72,538	66,038	77,413	70,138	82,383
Other sorts (including bags and sacks)	10,783	10,335	10,476	13,865	13,257
	129,231	126,375	143,221	116,479	129,200
Hemp:					
Manufactures (excluding cordage):					
Cloth	5,900	5,056	6,554	6,687	5,680
Bags and Sacks	350	170	41	24	21
	6,250	5,226	6,595	6,711	5,701
Jute:					
Manufactures:					
Gunny Bags	35,434	40,630	40,586	40,922	43,015
,, Cloths	9,045	9,314	10,901	192	1,046
Canvas	0	0	0	21,780	27,686
Twist and yarn	0	0	0	497	88
Rope and Twine	1,429	1,710	551	1,762	715
Other kinds	698	755	4,504	1,034	680
	46,606	52,409	56,542	66,187	73,230
Silk:					
Manufactures:					
Thread for sewing, &c.	7,235	11,193	6,044	10,085	10,761
Piece goods	1,349,675	1,423,027	1,201,293	1,453,407	1,491,261
Goods of silk mixed with other materials	321,132	335,761	165,003	273,471	275,108
Other sorts	4,124	8,133	14,022	13,732	24,441
	1,682,166	1,778,114	1,386,362	1,750,695	1,801,571
Wool:					
Manufactures.					
Piece goods	1,189,526	1,039,897	1,295,162	1,336,697	1,130,836
Shawls	161,119	234,254	293,054	197,749	190,548
Braids	66,501	51,527	55,979	53,760	52,667
Other sorts	144,804	129,557	174,018	173,825	149,192
	1,561,950	1,455,235	1,818,213	1,762,031	1,523,243
Total Yarns and Textile Fabrics	34,938,408	33,291,552	34,422,298	32,392,712	29,159,942
Agricultural Implements	62,619	60,170	59,737	73,362	66,105
Apparel:					
Apparel (including haberdashery, millinery, &c., but excluding hosiery)	1,131,333	1,175,207	1,213,509	1,259,403	1,259,881
Boots and Shoes	111,764	121,187	136,389	138,624	123,949
	1,243,097	1,296,394	1,349,898	1,398,027	1,383,830
Arms, Ammunition, &c. (excluding military accoutrements):					
Fire-arms and parts thereof	58,104	40,057	36,376	44,456	66,397
Gunpowder, common	13,877	2,306	6,336	8,179	10,283
,, sporting	21,832	19,139	20,807	25,925	20,641
Dynamite and other explosives	51,520	83,978	89,018	79,279	75,845
Other sorts	54,514	46,111	53,794	48,678	52,609
	199,847	191,591	206,331	206,517	225,775
Art, works of	32,603	37,247	44,175	57,801	42,800
Books and Printed Matter (including maps and charts)	214,129	215,027	222,401	221,594	230,564

No. 6—*continued.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Building and Engineering Materials:						
Asphalt	Cwt.	28,807	30,779	44,453	28,585	11,465
Bricks and Tiles	No.	3,809,854	2,681,711	3,105,632	3,027,412	2,425,744
Cement	Cwt.	425,606	496,230	556,608	549,336	509,779
Chalk and Lime	„	20,260	63,696	24,988	56,019	25,251
Clay	„	16,992	34,596	44,858	38,968	25,448
Earthenware Piping	„	38,097	31,428	31,181	38,226	37,183
Other sorts	„	10,565	22,968	5,848	13,891	4,570
Cabinet-ware and Furniture		—	—	—	—	—
Candles	Lbs.	2,423,446	4,189,745	3,627,375	3,868,523	4,177,768
Caoutchouc, manufactures of		—	—	—	—	—
Carriages, Carts, &c. (excluding railway carriages), and parts thereof		—	—	—	—	—
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain)		—	—	—	—	—
Clocks and Watches	No.	118,877	113,779	168,904	171,114	141,500
Coir, manufactures of (excluding rope)	Cwt.	11,071	10,853	13,276	16,324	14,082
Corals, Real	Lbs.	168,120	196,275	223,233	231,860	174,565
Cordage and Rope of vegetable fibre (excluding jute)	Cwt.	7,162	7,925	10,707	9,438	6,637
Corks	„	1,455	1,275	1,372	1,177	1,012
Earthenware and Porcelain		—	—	—	—	—
Fireworks		—	—	—	—	—
Glass:						
Sheet and Plate	Supl. Feet	6,407,266	5,942,971	7,988,193	6,826,756	7,663,861
Beads and False Pearls	Cwt.	27,993	23,046	18,655	22,802	16,467
Bottles, common	Gross	16,352	17,002	24,791	19,595	18,438
	= Cwt.	23,848	23,905	31,117	26,784	27,533
Other ware		—	—	—	—	—
Hides and Skins:						
Hides, dressed or tanned	No.	8,215	8,802	8,936	4,690	13,220
	= Cwt.	452	785	637	469	785
Skins, dressed or tanned	No.	124,902	160,899	167,571	159,159	167,596
	= Cwt.	1,126	1,245	1,557	1,475	1,225
Instruments and Apparatus:						
Musical		—	—	—	—	—
Photographic		—	—	—	—	—
Scientific, Philosophical, &c.		—	—	—	—	—
Ivory, manufactured		—	—	—	—	—
Jewellery, &c.:						
Jewellery		—	—	—	—	—
Plate		—	—	—	—	—
Lac:						
Shell	Cwt.	2	28	0	0	2
Other sorts	„	0	0	0	0	0
Leather:						
Unwrought	„	2,137	1,721	1,739	2,302	1,554
Manufactures of:						
Saddlery and Harness		—	—	—	—	—
Other sorts		—	—	—	—	—
Matches, lucifer and other		—	—	—	—	—
Mats	Sq. Yds.	897,646	959,544	1,031,144	1,209,463	1,181,059
Oil and Floor Cloth	„	347,284	318,388	421,082	547,769	553,596
Paints and Colours	Cwt.	184,383	154,124	150,436	151,776	170,537
Painter's Materials	„	—	—	—	—	—
Paper and Pasteboard:						
Printing Paper	„	85,142	79,117	100,164	94,163	99,943
Writing Paper and Envelopes		—	—	—	—	—
Other kinds of Paper	Cwt.	45,835	50,212	47,404	71,083	51,862
Pasteboard, Millboard, &c.	„	8,438	3,309	7,864	10,772	6,213

No. 7—*continued.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*continued.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Building and Engineering Materials:					
Asphalt	7,590	8,409	11,242	7,170	12,917
Bricks and Tiles	33,996	23,304	25,211	22,908	17,027
Cement	102,196	121,515	124,529	115,673	100,418
Chalk and Lime	2,098	6,145	2,735	4,801	2,177
Clay	3,122	5,794	8,703	7,059	4,417
Earthenware Piping	13,200	11,539	11,885	14,457	12,775
Other sorts	1,036	2,515	511	942	480
	163,238	179,221	184,816	173,010	140,211
Cabinet-ware and Furniture	100,580	99,397	91,415	113,258	96,062
Candles	77,976	135,947	111,495	126,777	148,426
Caoutchouc, manufactures of	23,860	24,440	23,915	29,909	29,763
Carriages, Carts, &c. (excluding railway carriages), and parts thereof	72,566	66,260	82,041	81,167	71,960
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain)	45,179	41,183	38,237	36,080	34,020
Clocks and Watches	100,677	104,531	129,732	140,283	115,789
Coir, manufactures of (excluding rope)	10,752	11,470	12,182	16,525	13,822
Corals, Real	141,790	140,194	168,716	168,113	121,046
Cordage and Rope of vegetable fibre (excluding jute)	28,872	36,231	41,371	37,250	29,758
Corks	19,932	17,978	17,454	12,151	12,753
Earthenware and Porcelain	224,820	223,929	227,874	273,573	251,593
Fireworks	28,368	54,551	63,367	68,270	63,208
Glass:					
Sheet and Plate	56,155	55,244	69,035	68,911	70,042
Beads and False Pearls	194,767	183,771	158,212	167,628	136,864
Bottles, common	23,245	25,823	32,914	27,383	28,694
Other ware	383,887	382,289	390,076	464,281	435,204
	658,054	647,127	650,237	728,203	670,804
Hides and Skins:					
Hides, dressed or tanned	8,485	9,144	7,232	7,609	9,580
Skins, dressed or tanned	25,743	33,120	33,848	37,701	38,656
Instruments and Apparatus:					
Musical	91,559	85,588	94,165	95,772	90,188
Photographic	26,161	28,276	30,014	35,087	35,369
Scientific, Philosophical, &c.	92,072	99,893	106,427	121,724	115,168
Ivory, manufactured	7,611	17,506	21,189	22,393	18,232
Jewellery, &c.:					
Jewellery	105,246	75,735	84,108	77,680	83,713
Plate	11,040	7,981	10,443	12,420	9,730
Lac:					
Shell	3	121	0	0	6
Other sorts	0	0	0	0	0
Leather:					
Unwrought	36,969	32,097	31,792	36,293	30,225
Manufactures of:					
Saddlery and Harness	59,355	64,668	57,060	66,395	64,566
Other sorts	70,618	88,053	81,403	88,761	84,754
Matches, lucifer and other	194,546	239,407	282,755	331,689	358,957
Mats	13,990	12,724	12,607	16,027	16,123
Oil and Floor Cloth	18,424	17,838	23,627	29,664	28,936
Paints and Colours	241,609	204,044	233,815	225,747	222,279
Painters' Materials	66,314	63,322	69,046	67,112	77,239
Paper and Pasteboard:					
Printing Paper	156,594	142,826	178,844	170,682	182,325
Writing Paper and Envelopes	143,658	154,626	153,583	163,353	150,162
Other kinds of Paper	102,484	106,819	93,843	129,981	99,367
Pasteboard, Millboard, &c.	7,799	3,208	5,166	6,323	4,244
	410,535	407,479	431,436	470,339	436,098

No. 6—*concluded.*

QUANTITY of IMPORTS of PRINCIPAL ARTICLES into British India—*concluded.*

ARTICLES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Perfumery		—	—	—	—	—
Printing and Lithographing materials (other than paper)		—	—	—	—	—
Ships, parts of		—	—	—	—	—
Soap	Cwt.	74,072	64,190	53,447	60,756	56,243
Stationery (excluding paper)		—	—	—	—	—
Telegraph, Materials for construction of		—	—	—	—	—
Toys and Requisites for Games		—	—	—	—	—
Umbrellas	No.	4,728,320	3,722,720	3,749,754	4,684,125	4,733,054
Wood, manufactures of		—	—	—	—	—
Articles (not specified) imported by Post		—	—	—	—	—
All other Articles		—	—	—	—	—

No. 7—*concluded.*

VALUE of IMPORTS of PRINCIPAL ARTICLES into British India—*concluded.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Perfumery	26,018	30,368	27,230	27,910	32,709
Printing and Lithographing materials (other than paper)	38,124	35,513	48,008	50,790	44,317
Ships, parts of	189,145	67,328	42,220	59,484	51,072
Soap	102,289	111,388	92,852	110,417	136,478
Stationery (excluding paper)	223,846	232,133	223,874	245,567	252,042
Telegraph, materials for construction of	1,020	1,694	1,165	6,520	3,303
Toys and Requisites for Games	157,967	135,862	150,094	161,394	152,475
Umbrellas	410,604	314,106	326,092	414,942	441,145
Wood, manufactures of	46,378	51,931	41,511	42,052	47,861
Articles (not specified) imported by Post	220,466	236,184	248,630	231,435	245,063
All other Articles	171,793	165,095	176,375	180,836	198,672
Total Value of Articles Manufactured and partly Manufactured	41,455,297	39,743,039	41,136,710	39,628,342	36,223,187
GRAND TOTAL	66,570,318	66,560,120	69,034,900	66,587,457	62,605,030

No. 8.

Quantity of Exports of Principal Articles of Indian Produce and Manufacture from British India.

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
I.—Animals, Living :						
Horses	No.	864	468	726	564	589
Other sorts	„	96,044	102,755	114,947	107,231	131,591
Total Number of Animals, Living	„	96,908	103,223	115,673	107,795	132,180
II.—Articles of Food and Drink :						
Coffee	Cwt.	365,299	239,795	233,451	311,864	296,687
Fruits and Vegetables :						
Fruits :						
Cocoanuts	No.	425,851	454,150	250,659	349,884	285,610
„ Kernel or Copra	Cwt.	45,279	6,777	7,673	36,265	47,377
Other sorts		—	—	—	—	—
Vegetables, fresh		—	—	—	—	—
Grain and Pulse :						
Gram	Cwt.	293,674	334,918	317,861	341,567	308,990
Jowari and Bajra	„	611,960	932,572	1,095,952	1,572,882	920,366
Pulse	„	618,489	313,808	301,035	785,709	435,993
Oats	„	56,187	115,421	86,928	89,680	71,689
Rice in the husk	„	376,412	324,655	489,288	427,048	542,812
„ not in the husk	„	22,768,229	26,774,251	34,474,053	32,739,881	27,395,513
Wheat	„	17,610,081	13,799,224	14,320,496	30,303,425	14,973,453
Other sorts	„	81,389	92,420	63,051	125,680	244,702
	„	42,416,421	42,687,269	51,148,664	66,385,872	44,893,518
Liquors :						
Spirits :						
Rum	Gals.	51	4,476	3,248	95,392	1,338
Other sorts	„	43	0	31,727	11,054	28
Other sorts	„	22	11	0	0	2
		116	4,487	34,975	106,446	1,368
Provisions :						
Biche de mer	Lbs.	40,472	31,729	51,239	49,741	43,685
Fishmaws and Sharkfins	„	858,470	709,777	911,839	779,104	860,022
Flour	„	36,290,371	48,572,042	47,035,853	61,028,205	57,940,360
Fruits and Vegetables—dried, salted, or preserved	Cwt.	141,264	151,344	134,986	175,355	186,012
Ghee	Lbs.	2,175,171	2,343,333	2,360,205	2,253,012	2,528,305
Lard	„	724,279	904,288	762,851	830,498	487,436
Salted fish	„	6,146,797	5,101,581	7,119,915	7,770,318	7,932,191
Dried fish, not salted	„		1,480,960	1,622,215	1,898,448	1,797,609
Other sorts	Cwt.	82,368	75,836	56,055	114,770	131,444
Spices :						
Betelnuts	Lbs.	328,056	275,102	174,423	292,308	275,310
Cardamoms	„	377,241	145,607	175,638	278,309	304,527
Chillies	„	0	7,025,696	7,833,742	8,297,413	8,363,229
Cinnamon	„	12,530	10,758	15,271	11,695	5,860
Ginger	„	10,212,971	6,918,681	4,190,594	3,185,378	4,714,203
Nutmegs	„	190	0	720	1,839	1,488
Pepper	„	7,666,007	8,249,100	11,891,814	11,849,448	12,257,270
Other sorts	„	6,504,280	70,042	145,706	156,168	179,997
	„	25,101,275	22,694,986	24,478,008	24,072,558	26,101,884
Sugar:						
Refined or crystallised, including sugarcandy	Cwt.	34,523	111,323	28,768	37,044	37,461
Unrefined, *viz.*, molasses and jaggery or goor, and other saccharine produce	„	978,955	1,309,321	795,973	940,574	798,773
	„	1,013,478	1,420,644	824,741	977,618	836,234
Tea	Lbs.	97,011,112	103,760,104	107,014,993	120,149,407	114,722,447
Other articles		—	—	—	—	—

No. 9.

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India.

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
I.—ANIMALS, LIVING :					
Horses	17,695	9,112	12,325	7,730	7,386
Other sorts	94,451	88,973	109,953	94,148	129,921
Total Value of Animals, Living	112,146	98,085	122,278	101,878	137,307
II.—ARTICLES OF FOOD AND DRINK :					
Coffee	1,884,243	1,489,872	1,454,985	1,998,659	2,066,362
Fruits and Vegetables :					
Fruits :					
Cocoanuts	1,265	1,496	758	910	957
„ Kernel or Copra	39,952	6,928	7,998	36,008	42,107
Other sorts	3,668	1,942	3,031	1,714	1,686
Vegetables, fresh	37,440	41,824	37,771	45,907	45,267
	82,325	52,190	49,558	84,539	90,017
Grain and Pulse :					
Gram	93,714	116,493	103,346	115,018	116,811
Jowari and Bajra	198,422	313,822	350,403	491,306	319,896
Pulse	167,136	120,194	115,256	249,110	166,364
Oats	18,235	42,723	26,400	25,849	27,232
Rice in the husk	70,058	63,151	104,111	89,178	132,367
„ not in the husk	7,845,350	10,047,331	12,773,629	13,296,792	12,274,352
Wheat	7,522,676	5,791,377	6,042,426	14,380,462	7,440,383
Other sorts	28,089	33,134	23,727	47,965	85,567
	15,943,680	16,528,225	19,539,298	28,695,680	20,562,972
Liquors :					
Spirits :					
Rum	26	448	494	11,594	171
Other sorts	25	0	15,643	4,422	21
Other sorts	5	10	0	0	1
	56	458	16,137	16,016	193
Provisions :					
Biche de mer	580	445	766	661	573
Fishmaws and Sharkfins	70,094	59,315	79,982	73,567	78,898
Flour	207,925	283,767	272,890	361,586	342,280
Fruits and Vegetables—dried, salted, or preserved	55,269	48,540	47,118	75,163	63,762
Ghee	79,197	89,563	89,193	87,522	103,706
Lard	18,792	22,884	20,685	21,775	12,211
Salted fish	62,977	50,249	62,316	73,828	76,437
Dried fish, not salted		10,511	12,333	13,311	13,303
Other sorts	58,649	59,151	48,094	69,118	79,632
	553,483	624,425	633,377	776,531	775,802
Spices :					
Betelnuts	4,267	3,716	2,545	4,421	4,187
Cardamoms	40,033	18,385	18,928	31,896	29,697
Chillies	0	64,728	65,178	74,021	76,560
Cinnamon	391	426	598	641	332
Ginger	131,751	70,398	45,431	63,887	152,328
Nutmegs	23	0	106	229	154
Pepper	316,833	304,359	317,462	229,163	245,818
Other sorts	66,908	2,111	6,809	4,720	5,599
	560,206	464,123	455,057	408,978	514,675
Sugar :					
Refined or crystallised, including sugar-candy	43,362	149,132	38,375	47,114	53,643
Unrefined, *viz.*, molasses and jaggery or goor, and other saccharine produce	506,977	768,047	379,187	461,303	454,272
	550.339	917,179	417,562	508,417	507,915
Tea	5,267,315	5,277,649	5,219,233	5,968,129	6,292,348
Other articles	263	2	13	5	163
Total Value of Articles of Food and Drink	24,841,910	25,354,123	27,785,220	38,456,954	30,810,947

No. 8—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
III.—METALS AND MANUFACTURES OF:						
Metals:						
Brass:						
Unwrought	Cwt.	0	0	0	14	0
Wrought	„	1,860	2,027	2,043	2,680	2,936
Copper:						
Old, for re-manufacture	„	26	12	31	2	0
Wrought:						
Sheets and other manufactures	„	1,404	2,953	2,216	2,154	2,835
Iron:						
Ore	„	0	0	0	1	0
Cast (pig)	„	9	0	0	0	0
Old, for re-manufacture	„	322	264	266	137	2,541
Wrought:						
Anchors, Cables, and Kentledge	„	1,562	1,191	2,291	2,129	1,930
Nails, Screws, and Rivets	„	1,714	2,891	2,682	2,538	3,519
Other manufactures of wrought or cast iron, or of iron mixed with steel	„	2,799	3,189	4,384	4,568	4,645
Lead	„	864	637	1,256	6,274	3,097
Tin:						
Unwrought (block)	„	441	674	456	1,436	951
Wrought (including plates or sheets, not tinned iron)	„	12	1	0	0	24
Zinc or Spelter	„	1	1	4	0	0
Unenumerated	„	175	192	205	356	20,141
	„	11,189	14,032	15,834	22,289	42,619
Hardware and Cutlery (including plated ware)		—	—	—	—	—
Machinery and Millwork		—	—	—	—	—
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:						
Chemicals		—	—	—	—	—
Drugs, Medicines and Narcotics:						
Aloes	Cwt.	64	241	58	41	119
Asafœtida	„	13	243	372	514	607
Camphor	Lbs.	12,410	4,880	5,063	7,481	3,458
Cinchona Bark	„	3,074,090	1,854,632	2,995,845	2,693,859	2,813,637
Galangal	Cwt.	1,161	613	1,352	1,679	1,531
Other sorts		—	—	—	—	—
Opium	Chests	87,789	85,166	85,753	87,558	75,384
	=Cwt.	122,160	118,598	119,627	121,701	104,658
Tobacco:						
Unmanufactured	Lbs.	6,799,880	6,312,297	7,554,905	7,514,893	11,808,432
Manufactured:						
Cigars	„	370,075	354,429	410,615	457,887	517,970
Other sorts	„	175,269	194,143	193,146	306,913	305,767
	„	7,345,224	6,860,869	8,158,666	8,279,693	12,632,169
Dyeing and Tanning Materials:						
Cutch	Cwt.	290,896	221,986	156,493	197,059	229,316
Gambier	„	1	0	0	5	0
Indigo	„	142,447	157,116	118,425	125,327	126,703
Lac-dye	„	334	329	163	45	249
Myrabolams	„	628,059	781,741	655,195	790,802	667,549
Safflower	„	2,834	1,647	3,562	1,525	990
Turmeric	„	43,325	36,790	28,250	42,391	59,907
Other sorts	„	33,855	45,656	38,221	24,183	43,790
	„	1,141,751	1,245,265	1,000,309	1,181,337	1,128,504

No. 9—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
III.—METALS AND MANUFACTURES OF:					
Metals:					
Brass:					
Unwrought	0	0	0	73	0
Wrought	22,165	22,026	21,417	26,429	31,033
Copper:					
Old, for re-manufacture	99	50	112	7	0
Wrought:					
Sheets and other manufactures	10,598	17,599	14,945	15,393	19,393
Iron:					
Ore	0	0	0	1	0
Cast (pig)	6	0	0	0	0
Old, for re-manufacture	49	41	39	25	511
Wrought:					
Anchors, Cables, and Kentledge	1,392	1,058	1,944	1,654	1,417
Nails, Screws, and Rivets	1,776	2,950	2,689	2,569	3,745
Other manufactures of wrought or cast iron, or of iron mixed with steel	2,994	3,173	4,498	4,447	4,089
Lead	1,013	564	900	5,254	2,401
Tin:					
Unwrought (block)	2,739	3,697	2,385	7,613	5,661
Wrought (including plates or sheets, not tinned iron)	51	5	0	2	30
Zinc or Spelter	1	2	2	0	0
Unenumerated	1,103	961	1,337	2,432	5,925
	43,986	52,126	50,268	65,899	74,205
Hardware and Cutlery (including plated ware)	9,361	11,055	10,258	10,995	9,908
Machinery and Millwork	176	92	618	125	294
Total Value of Metals and Manufactures of	53,523	63,273	61,144	77,019	84,407
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
Chemicals	4,992	6,089	6,156	9,659	9,772
Drugs, Medicines and Narcotics.					
Aloes	69	283	68	64	177
Asafœtida	60	381	622	927	1,146
Camphor	520	262	368	537	265
Cinchona Bark	201,016	118,635	133,780	97,986	85,898
Galangal	778	387	941	1,187	1,156
Other sorts	88,726	95,505	98,854	84,336	110,422
	291,169	215,453	234,633	185,037	199,064
Opium	10,508,081	10,115,936	9,261,814	9,562,261	9,255,014
Tobacco:					
Unmanufactured	66,767	68,734	90,780	90,178	120,611
Manufactured:					
Cigars	34,791	35,549	40,352	42,672	43,096
Other sorts	2,191	2,672	2,720	3,838	4,401
	103,749	106,955	133,852	136,688	168,108
Dyeing and Tanning Materials:					
Cutch	442,322	333,400	236,355	317,296	382,484
Gambier	4	0	0	3	0
Indigo	3,948,595	3,863,084	3,073,125	3,214,077	4,141,179
Lac-dye	804	308	502	250	1,009
Myrabolams	249,337	317,533	300,714	393,690	336,709
Safflower	9,423	3,574	4,948	1,976	1,714
Turmeric	20,565	20,081	24,155	45,476	71,272
Other sorts	6,420	7,832	6,966	6,018	8,825
	4,677,470	4,546,372	3,646,765	3,978,786	4,943,192
Total Value of Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials	15,585,461	14,990,805	13,283,220	13,872,431	14,575,150

No. 8—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
V.—OILS:						
Oils:						
Animal	Gals.	16,580	2,874	13,568	577	39,695
Essential	,,	15,270	12,128	15,311	16,426	18,261
Mineral	,,	26,417	24,339	44,840	43,388	71,780
Vegetable, not Essential:						
Dregs of Jinjili Oil	Cwt.	49,703	50,308	48,434	56,697	75,338
Castor	Gals.	2,092,913	2,664,990	3,157,234	3,273,980	2,578,992
Cocoanut	,,	1,525,910	1,369,532	924,251	1,396,186	1,643,971
Earthnut	,,	224	9,620	13,374	30,703	11,600
Til or Jinjili	,,	72,159	91,120	76,120	77,436	122,640
Other sorts	,,	92,259	164,796	194,896	216,189	347,574
Total Quantity of Oils	Gals.	3,841,732	4,339,399	4,439,594	5,054,885	4,834,513
	& Cwt.	49,703	50,308	48,434	56,697	75,338
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:						
Borax	Cwt.	7,652	6,717	6,825	9,253	7,677
Canes and Rattans	,,	3,567	1,920	5,466	6,358	3,665
Caoutchouc, raw	,,	8,673	9,934	9,292	9,334	9,972
Coal, &c.	Tons	15,796	39,972	26,336	4,515	15,725
Coir, unmanufactured	Cwt.	16,802	18,701	22,495	29,204	38,587
Cotton, raw	,,	5,331,536	6,320,342	5,913,923	4,424,947	4,789,201
Feathers	Lbs.	93,995	71,460	75,378	106,910	144,328
Flax, raw	,,	0	2,750	0	0	5,040
Gums and Resins	Cwt.	62,645	38,905	36,729	38,565	42,372
Hemp, raw	,,	131,530	111,160	56,318	75,736	84,974
Hides and Skins:						
Hides, raw	No.	6,606,142	6,454,895	6,803,566	6,707,397	6,734,507
	= Cwt.	533,754	486,626	492,553	503,682	471,574
Skins, raw	No.	4,356,561	3,906,711	5,377,855	6,715,953	8,477,905
	= Cwt.	41,590	37,993	60,846	79,464	102,090
Horns	Cwt.	62,136	70,397	61,755	85,189	60,499
Ivory, unmanufactured	Lbs.	11,495	10,863	13,326	7,245	11,213
Jewellery, &c.:						
Precious Stones and Pearls, unset		—	—	—	—	—
Jute, raw	Cwt.	10,553,143	10,255,904	11,985,967	8,532,430	10,537,512
Lac, stick	,,	126	0	90	215	1,331
Manures.						
Animal Bones	Tons	35,393	44,400	61,410	43,766	47,584
Other sorts	,,	978	1,273	1,288	1,211	1,032
Mica (commercially called Talc)	Cwt.	1,604	2,632	6,384	2,325	3,339
Mowa or Mowra Flowers	,,	90	22	2,946	20,710	730
Musk	Oz.	4,934	7,208	3,282	4,113	1,514
Natural Curiosities		—	—	—	—	—
Rags and other materials for making paper	Cwt.	135,969	116,952	95,815	95,005	53,093
Saltpetre	,,	420,503	422,229	399,690	389,185	443,931
Seeds:						
Essential:						
Ajama	,,	1,513	2,023	3,018	1,680	6,352
Ajowan	,,	505	217	472	414	483
Aniseed	,,	757	1,110	2,826	1,361	794
Coriander	,,	38,488	35,678	38,233	40,650	43,207
Cummin	,,	11,117	11,351	11,653	11,736	10,132
,, black	,,	804	467	743	824	974
Fennel	,,	2,965	1,426	3,331	6,557	10,509
Fenugreek	,,	1,153	725	676	770	542
Sawa or Dill-seed	,,	220	167	279	285	929
Other sorts	,,	236	325	327	13,303	291
Castor	,,	585,769	894,631	859,772	835,925	989,534
Cotton	,,	135,582	38,381	18,767	16,295	23,550
Earthnuts	,,	827,997	1,394,191	1,525,238	1,529,940	1,524,796
Linseed	,,	8,461,374	7,146,896	8,077,301	10,866,592	7,817,554
Mowa or Mowra	,,	75,489	46,343	23,695	136,722	33,998
Mustard	,,	37,878	18,195	35,199	52,814	77,476
Poppy	,,	730,455	482,893	678,511	616,434	501,741
Rape	,,	3,061,586	3,904,150	1,554,708	2,615,865	2,802,070
Til or Jinjili	,,	1,537,444	1,775,559	1,846,732	2,302,172	2,554,768
Other sorts	,,	58,646	40,014	117,518	114,183	109,461
	,,	15,569,978	15,794,742	14,798,999	19,164,522	16,509,161

No. 9—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
V.—OILS:					
Oils:					
Animal	912	163	636	45	2,437
Essential	26,780	20,277	24,810	24,529	42,020
Mineral	1,534	1,612	2,580	2,002	2,661
Vegetable, not Essential:					
Dregs of Jinjili Oil	10,060	10,359	9,950	15,039	22,912
Castor	203,147	328,316	373,365	342,123	266,748
Cocoanut	165,338	146,617	102,545	154,939	183,193
Earthnut	24	1,101	1,506	3,363	1,619
Til or Jinjili	9,864	13,122	9,363	10,011	17,872
Other sorts	12,647	22,378	27,148	31,760	56,106
Total Value of Oils	430,306	543,945	551,903	583,811	595,568
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Borax	12,870	10,092	10,877	14,292	13,010
Canes and Rattans	2,390	1,257	5,066	5,413	3,814
Caoutchouc, raw	96,735	113,750	117,318	117,237	130,782
Coal, &c.	15,030	38,905	26,388	4,649	15,803
Coir, unmanufactured	11,948	12,397	15,855	20,478	28,152
Cotton, raw	15,045,648	18,668,404	16,502,775	10,754,312	12,743,679
Feathers	46,888	28,418	20,326	23,515	31,381
Flax, raw	0	28	0	0	61
Gums and Resins	282,800	131,562	97,828	91,889	96,116
Hemp, raw	111,894	97,313	42,229	64,360	79,155
Hides and Skins:					
Hides, raw	1,747,487	1,664,854	1,695,401	1,723,884	1,758,792
Skins, raw	381,956	335,399	465,154	643,159	876,704
Horns	161,123	194,286	203,060	333,762	252,639
Ivory, unmanufactured	6,278	6,570	8,290	4,540	6,969
Jewellery, &c.					
Precious Stones and Pearls, unset	10,821	9,602	11,669	10,492	12,333
Jute, raw	7,897,154	8,639,861	7,602,010	6,848,494	7,944,223
Lac, stick	265	0	179	694	4,787
Manures:					
Animal Bones	174,077	242,749	335,773	230,957	246,060
Other sorts	1,896	3,140	3,630	5,857	4,582
Mica (commercially called Talc)	35,983	56,224	91,303	42,871	43,435
Mowa or Mowra Flowers	19	6	440	3,111	212
Musk	13,675	19,338	6,825	13,612	4,308
Natural Curiosities	20,855	30,635	16,908	15,524	17,987
Rags and other materials for making paper	56,487	52,417	35,090	27,096	16,300
Saltpetre	401,801	411,276	380,059	365,618	438,940
Seeds:					
Essential:					
Ajama	835	1,105	1,536	1,018	3,774
Ajowan	288	138	297	245	290
Aniseed	625	1,192	3,058	1,144	686
Coriander	23,808	19,395	20,111	21,131	31,844
Cummin	17,135	20,023	19,230	18,273	16,610
,, black	638	377	529	665	1,005
Fennel	2,153	1,252	3,204	5,811	8,846
Fenugreek	650	474	447	477	357
Sawa or Dill-seed	127	113	163	180	565
Other sorts	193	249	223	6,847	268
Castor	312,874	607,429	514,785	449,037	566,444
Cotton	30,158	8,870	3,685	4,152	6,171
Earthnuts	478,981	813,865	877,329	875,851	1,063,034
Linseed	5,057,922	4,734,691	4,984,123	6,793,440	5,526,297
Mowa or Mowra	32,533	19,568	10,363	55,574	15,489
Mustard	22,218	12,934	26,711	38,682	53,927
Poppy	476,173	367,963	474,141	406,514	345,493
Rape	1,916,749	2,685,154	979,570	1,708,952	1,835,042
Til or Jinjili	1,147,002	1,309,881	1,356,980	1,765,340	2,092,316
Other sorts	40,694	22,880	66,767	55,125	62,557
	9,561,756	10,627,553	9,343,252	12,208,458	11,631,015

No. 8—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*						
Silk :						
Raw	Lbs.	433,473	593,425	502,603	518,705	655,338
Chasam	„	1,313,874	1,233,494	1,112,213	1,012,254	1,087,500
Cocoons	„	374,567	262,843	145,695	131,560	77,395
Stone and Marble	Cwt.	9,528	18,123	7,726	12,185	13,656
„ Jade	„	4,898	5,174	2,846	2,855	3,508
Tallow	„	3,759	2,690	3,146	2,946	6,375
Wax (excluding candles)	„	10,611	12,142	14,999	19,449	25,945
Wood :						
Teak	Cubic Tons	52,609	71,342	42,803	48,190	58,350
Other Timber	Tons	1,511	2,533	3,637	3,844	3,622
Firewood	„	110	132	0	3	40
Ornamental :						
Sandal		—	—	—	—	—
Ebony		—	—	—	—	—
Other sorts		—	—	—	—	—
Wool, raw	Lbs.	21,960,848	23,870,232	21,344,843	22,314,403	24,717,907
All other Articles		—	—	—	—	—
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED :						
Yarns and Textile Fabrics :						
Cotton :						
Twist and Yarn	Lbs.	128,906,764	141,949,951	169,275,304	161,253,234	189,174,726
Manufactures :						
Piece goods :						
Grey (unbleached)	Yards	54,938,813	45,060,511	53,196,246	56,627,542	61,491,754
White (bleached)	„	116,355	126,906	67,645	112,962	182,644
Coloured, Printed, or Dyed	„	15,189,059	14,275,099	14,375,003	16,610,271	18,004,132
Handkerchiefs and Shawls in the piece	No.	1,073,077	1,224,019	1,868,988	1,938,177	1,031,439
Other sorts	Yards	21,122	33,035	27,035	33,166	104,464
Hosiery, pure and mixed		—	—	—	—	—
Thread, sewing	Lbs.	50,739	52,283	49,834	40,231	58,503
Canvas	Yards	1,856	3,357	13,390	8,737	5,366
Other sorts	Lbs.	1,851,855	1,409,752	2,590,962	4,186,292	4,625,362
Flax :						
Twist and Yarn	Lbs.	0	0	672	0	0
Manufactures :						
Piece goods	Yards	8,254	17,501	6,383	5,150	2,211
Canvas	Yards	0	228	551	120	25
Other sorts (including bags and sacks)	Lbs.	4,120	13,222	8,684	16,058	72,270
Hemp :						
Manufactures (excluding cordage) :						
Cloth	Yards	49	200	3,775	11,333	0
Bags and Sacks	No.	520	200	7,685	0	0
Jute :						
Manufactures :						
Gunny Bags — Power-loom	No.	98,720,245	96,784,220	98,749,416	106,250,612	123,974,986
Gunny Bags — Hand-loom	„	1,070,342	631,675			
Gunny Cloths — Power-loom	Yards	14,979,288	37,126,737	29,854,029	37,289,300	40,060,110
Gunny Cloths — Hand-loom	„	181,804	17,270			
Rope and Twine	Cwt.	9,033	8,913	6,609	2,482	4,439
Other sorts	„	88	13,428	8,973	619	105
Silk :						
Manufactures :						
Thread for sewing, &c.	Lbs.	1,033	0	900	0	0
Piece goods	Yards	2,807,203	2,330,360	2,002,959	1,728,969	1,768,165
Goods of silk mixed with other materials	„	169,035	184,500	221,121	211,467	276,812
Other sorts	Lbs.	15,225	0	12	312	4

No. 9—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*continued.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Silk :					
Raw	317,796	463,298	382,424	394,922	505,121
Chasam	144,125	135,359	118,003	105,489	102,823
Cocoons	56,830	41,161	20,642	18,266	9,630
Stone and Marble	5,877	3,714	3,599	7,553	8,044
„ Jade	65,404	81,935	60,720	52,122	67,025
Tallow	7,168	5,100	5,431	5,467	10,905
Wax (excluding candles)	42,096	41,612	59,245	64,973	74,884
Wood :					
Teak	575,263	762,998	425,303	474,852	570,102
Other Timber	6,035	10,334	16,587	19,028	20,958
Firewood	105	135	3	2	19
Ornamental :					
Sandal	50,501	63,945	79,482	81,083	64,755
Ebony	123	181	204	2,927	4,242
Other sorts	308	69	390	184	262
Wool, raw	968,753	1,085,637	968,322	1,013,864	1,116,578
All other Articles	171,691	200,396	319,840	364,336	360,984
Total Value of Raw Materials and Unmanufactured Articles	38,509,911	44,291,911	39,497,900	36,179,292	39,317,571
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED :					
Yarns and Textile Fabrics :					
Cotton :					
Twist and Yarn	5,207,100	5,748,732	6,543,364	5,771,033	6,773,482
Manufactures :					
Piece goods :					
Grey (unbleached)	646,698	503,612	616,409	649,096	719,128
White (bleached)	4,650	5,632	2,249	6,793	7,931
Coloured, Printed, or Dyed	431,874	401,935	421,757	476,294	495,291
Handkerchiefs and Shawls in the piece	52,352	64,525	80,541	80,292	42,813
Other sorts	1,589	1,988	1,640	2,027	3,531
Hosiery, pure and mixed	1,904	2,471	1,374	2,352	5,693
Thread, sewing	3,973	4,181	3,909	3,227	3,912
Canvas	83	134	382	319	182
Other sorts	24,341	20,533	31,014	43,603	48,694
	1,167,464	1,005,011	1,159,275	1,264,003	1,327,175
Flax :					
Twist and Yarn	0	0	6	0	0
Manufactures :					
Piece goods	556	1,183	474	386	197
Canvas	0	18	18	2	1
Other sorts (including bags and sacks)	264	507	516	928	4,072
Hemp :					
Manufactures (excluding cordage) :					
Cloth	1	5	83	229	0
Bags and Sacks	8	2	86	0	0
Jute :					
Manufactures :					
Gunny Bags — Power-loom	2,378,423	2,351,078	2,180,022	2,195,238	2,853,310
Gunny Bags — Hand-loom	22,343	15,057			
Gunny Cloths — Power-loom	157,558	394,082	282,801	313,816	378,574
Gunny Cloths — Hand-loom	1,831	186			
Rope and Twine	11,096	11,025	7,208	3,238	5,868
Other sorts	227	19,814	11,931	808	242
	2,571,478	2,791,242	2,481,962	2,513,100	3,237,994
Silk :					
Manufactures :					
Thread for sewing, &c. :	653	0	1,440	0	0
Piece goods	268,465	239,893	178,695	159,582	166,451
Goods of silk mixed with other materials	18,160	20,828	23,044	24,040	30,720
Other sorts	1,209	0	2	335	7
	288,487	260,721	203,181	183,957	197,178

No. 8—*concluded.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*concluded.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Yarns and Textile Fabrics—*cont.*						
Wool:						
Manufactures:						
Piece goods	Yards	196,015	207,783	222,546	234,840	214,150
Shawls	No.	8,144	7,252	4,580	4,080	5,497
Other sorts	Lbs.	691,653	751,363	553,839	598,810	827,282
Apparel (excluding hosiery)		—	—	—	—	—
Books and Printed Matter (including maps and charts)	Cwt.	3,864	3,406	3,380	3,792	3,581
Cabinet-ware and Furniture		—	—	—	—	—
Coir, manufactures of (excluding cordage)	Cwt.	195,187	259,661	222,878	289,343	258,011
Cordage and Rope of vegetable fibre (excluding jute)	„	26,851	32,710	32,025	32,808	39,299
Earthenware and Porcelain		—	—	—	—	—
Glass		—	—	—	—	—
Hides and Skins:						
Hides, dressed or tanned	No.	1,447,544	1,349,446	1,261,063	1,677,654	1,784,012
	=Cwt.	100,381	96,673	98,557	106,857	115,288
Skins, dressed or tanned	No.	19,946,919	19,244,116	19,291,167	20,761,341	20,429,093
	=Cwt.	172,579	164,043	173,819	183,544	183,642
Ivory, manufactured		—	—	—	—	—
Jewellery, &c.:						
Jewellery		—	—	—	—	—
Plate		—	—	—	—	—
Lac:						
Button	Cwt.	21,195	19,837	34,445	25,602	22,368
Shell	„	81,390	70,096	112,495	110,276	102,079
Other sorts	„	766	305	220	1,588	1,166
	„	103,351	90,238	147,160	137,466	125,613
Leather:						
Unwrought	„	236	148	143	130	2,510
Manufactures of:						
Saddlery and Harness		—	—	—	—	—
Other sorts		—	—	—	—	—
Mats	Sq. Yds.	86,367	105,255	102,872	99,184	129,017
Oil-cake	Cwt.	258,008	297,471	334,023	402,090	390,862
Perfumery (other than musk)		—	—	—	—	—
Soap	Cwt.	8,258	6,851	8,584	10,405	8,554
Toys and Requisites for Games		—	—	—	—	—
Wood, manufactures of		—	—	—	—	—
Articles (not specified) exported by Post		—	—	—	—	—
All other Articles		—	—	—	—	—

No. 9—*concluded.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of INDIAN PRODUCE and MANUFACTURE from British India—*concluded.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Wool:					
Manufactures:					
Piece goods	14,625	12,742	9,527	10,217	10,973
Shawls	26,601	30,247	24,371	13,654	20,132
Other sorts	80,879	82,812	70,268	70,918	88,975
	122,105	125,801	104,166	94,789	120,080
Total Yarns and Textile Fabrics	9,357,463	9,933,222	10,493,131	9,828,427	11,660,179
Apparel (excluding hosiery)	112,980	113,318	103,429	119,204	145,426
Books and Printed Matter (including maps and charts)	31,006	28,758	30,389	33,098	28,631
Cabinet-ware and Furniture	24,405	27,259	27,177	28,210	43,777
Coir, manufactures of (excluding cordage)	173,898	235,204	194,802	244,929	232,279
Cordage and Rope of vegetable fibre (excluding jute)	33,948	38,608	38,106	37,888	45,371
Earthenware and Porcelain	5,368	4,984	7,819	3,633	5,735
Glass	4,181	3,888	2,962	3,889	5,499
Hides and Skins:					
Hides, dressed or tanned	565,760	533,909	491,999	647,269	643,865
Skins, dressed or tanned	2,048,343	1,990,099	2,043,364	2,171,689	2,312,573
Ivory, manufactured	20	21	102	0	1,000
Jewellery, &c.:					
Jewellery	26,317	13,924	14,907	15,117	20,993
Plate	7,366	9,773	13,455	10,210	8,720
Lac:					
Button	78,870	114,227	185,689	137,901	131,211
Shell	319,413	373,087	594,860	606,793	643,851
Other sorts	1,727	1,199	715	5,837	5,101
	400,010	488,513	781,264	750,531	780,163
Leather:					
Unwrought	1,866	1,188	1,103	1,234	16,878
Manufactures of:					
Saddlery and Harness	2,497	3,030	2,356	1,887	2,610
Other sorts	349	409	505	860	999
	4,712	4,627	3,964	3,981	20,487
Mats	1,226	1,939	1,854	1,907	2,285
Oil-cake	64,397	74,721	88,442	104,520	118,495
Perfumery (other than musk)	4,844	4,241	4,962	6,349	7,455
Soap	8,505	5,925	7,468	8,768	6,809
Toys and Requisites for Games	29,786	29,188	21,805	24,953	23,627
Wood, manufactures of	28,361	32,456	35,915	31,387	34,921
Articles (not specified) exported by Post	126,976	127,066	131,587	141,672	155,739
All other Articles	49,605	57,269	61,632	61,795	120,728
Total Value of Articles Manufactured and partly Manufactured	13,109,477	13,758,912	14,600,528	14,279,446	16,424,757
GRAND TOTAL	92,642,734	99,101,054	95,902,193	103,550,831	101,945,707

No. 10.

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India.

ARTICLES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
I.—ANIMALS, LIVING:						
Horses	No.	46	105	108	216	209
Other sorts	„	0	4	23	81	88
Total Number of Animals, Living	„	46	109	131	297	297
II.—ARTICLES OF FOOD AND DRINK:						
Coffee	Cwt.	2,181	1,893	1,565	4,333	2,700
Fruits and Vegetables		—	—	—	—	—
Grain and Pulse:						
Gram	Cwt.	73	6	15	4	4
Pulse	„	0	0	0	1	44
Wheat	„	1,327	2,985	0	3,275	0
Other sorts	„	1,715	10,858	42	186	6,859
	„	3,115	13,849	57	3,466	6,907
Liquors:						
Ale, Beer, and Porter	Gals.	4,039	2,951	2,196	3,532	5,038
Spirits:						
Brandy	„	1,000	2,550	2,801	3,184	1,617
Gin	„	842	198	154	299	265
Rum	„	556	16	194	114	137
Whisky	„	1,537	3,129	1,782	1,766	1,926
Other sorts	„	1,087	563	640	160	454
	„	5,022	6,456	5,571	5,523	4,399
Wines and Liqueurs:						
Champagne	„	401	695	1,355	528	200
Claret	„	1,343	2,684	702	1,534	526
Port	„	226	881	215	364	332
Sherry	„	214	288	1,042	448	511
Other sorts	„	1,081	635	480	3,814	540
	„	3,265	5,183	3,794	6,688	2,109
Other sorts	„	95	6	16	12	16
Total Liquors	„	12,421	14,596	11,577	15,755	11,562
Provisions:						
Fishmaws and Sharkfins	Lbs.	960,574	1,235,597	1,037,110	720,308	1,347,845
Fruits and Vegetables—dried, salted, or preserved	Cwt.	73,802	83,076	71,060	69,673	68,422
Ghee	Lbs.	13,761	8,862	4,023	24,654	19,800
Salted Fish	„	177,660	92,148	186,331	271,546	318,600
Dried fish, not salted	„		66,379	19,396	35,250	172,312
Other sorts	Cwt.	7,775	3,693	3,754	3,238	2,991
Spices:						
Betelnuts	Lbs.	136,944	24,640	17,377	37,688	82,600
Cardamoms	„	60,160	936	280	704	686
Cinnamon	„	4,809	9,232	5,120	6,494	6,402
Cloves	„	3,384,638	3,230,111	2,250,419	1,017,433	1,024,858
Nutmegs	„	66,571	85,902	114,942	51,530	70,976
Pepper	„	149,050	141,817	84,742	151,254	46,124
Other sorts	„	30,287	10,698	7,310	10,837	16,038
	„	3,832,459	3,503,336	2,480,190	1,275,940	1,247,684
Sugar:						
Refined or crystallised, including sugar-candy	Cwt.	169,725	195,846	160,568	159,568	228,666
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	„	0	6	0	0	
Tea	Lbs.	2,328,756	1,849,429	3,179,826	3,368,662	3,408,737
Other articles		—	—	—	—	—

No. 11.

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India.

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
I.—ANIMALS, LIVING:					
Horses	1,450	3,509	3,720	4,760	7,227
Other sorts	0	1,050	190	760	378
Total Value of Animals, Living	1,450	4,559	3,910	5,520	7,605
II.—ARTICLES OF FOOD AND DRINK:					
Coffee	10,224	10,136	8,802	25,081	15,577
Fruits and Vegetables	32,002	14,975	18,210	3,566	4,907
Grain and Pulse:					
Gram	30	3	8	2	2
Pulse	0	0	0	1	16
Wheat	603	1,238	0	1,540	0
Other sorts	533	3,363	16	56	2,103
	1,166	4,604	24	1,599	2,121
Liquors:					
Ale, Beer, and Porter	1,026	798	513	990	972
Spirits:					
Brandy	875	2,067	1,697	2,303	1 100
Gin	285	92	66	97	74
Rum	65	5	36	30	30
Whisky	1,335	2,007	1,065	1,158	1,506
Other sorts	519	556	264	198	409
	3,079	4,727	3,128	3,786	3,119
Wines and Liqueurs:					
Champagne	974	1,208	3,360	1,337	528
Claret	722	1,049	454	2,033	637
Port	251	638	207	384	388
Sherry	202	325	955	418	509
Other sorts	854	586	501	3,029	523
	3,003	3,806	5,477	7,201	2,585
Other sorts	43	3	47	4	8
Total Liquors	7,151	9,334	9,165	11,981	6,684
Provisions:					
Fishmaws and Sharkfins	51,050	64,178	52,506	40,521	73,327
Fruits and Vegetables—dried, salted, or preserved	51,384	59,479	64,379	59,146	55,268
Ghee	491	313	145	880	854
Salted Fish	948	690	1,399	3,481	3,079
Dried Fish, not salted		650	101	324	1,390
Other sorts	22,191	12,301	12,771	13,200	12,346
	126,064	137,611	131,301	117,552	146,264
Spices:					
Betelnuts	1,319	312	189	361	1,101
Cardamoms	3,185	85	56	63	57
Cinnamon	80	156	149	82	95
Cloves	150,443	98,087	51,831	20,532	20,820
Nutmegs	9,105	10,935	13,291	4,252	5,653
Pepper	5,713	5,606	2,504	3,783	989
Other sorts	4,571	1,597	733	1,106	1,699
	174,416	116,779	68,753	30,179	30,414
Sugar:					
Refined or crystallised, including sugarcandy	200,704	267,609	197,659	192,628	328,080
Unrefined, viz., molasses and jaggery or goor, and other saccharine produce	0	2	0	0	0
Tea	205,823	167,838	285,060	315,741	328,151
Other articles	435	568	148	4,782	93
Total Value of Articles of Food and Drink	757,985	729,456	719,122	703,109	862,291

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
III.—METALS AND MANUFACTURES OF:						
Metals:						
Brass:						
Unwrought	Cwt.	0	2	0	0	0
Wrought	„	270	626	631	457	636
		270	628	631	457	636
Copper:						
Ore	„	0	0	0	0	399
Old, for re-manufacture	„	43	4	22	0	20
Unwrought:						
Tiles, Ingots, Cakes, and Bricks	„	4,264	6,502	5,736	10,992	15,665
Wrought:						
Lametta	„	33	8	0	16	2
Mixed or Yellow Metal, for sheathing	„	235	964	746	861	978
Sheets and other manufactures	„	2,208	13,880	10,213	14,382	16,966
	„	6,783	21,358	16,717	26,251	34,030
Iron:						
Ore	„	0	200	0	0	0
Old, for re-manufacture	„	259,409	384,409	168,844	155,297	256,288
Cast (pig)	„	120	200	0	1,500	6
Wrought:						
Anchors, Cables, and Kentledge	„	362	392	512	511	854
Bar	„	25,824	19,668	23,510	34,340	29,873
Angle, Bolt, and Rod	„	2,846	5,089	6,982	12,803	7,696
Sheets and Plates (including tinned plates)	„	6,180	5,367	3,516	10,099	16,299
Galvanised (other than wire)	„	4,008	6,054	7,013	4,250	7,237
Hoops	„	643	314	333	492	927
Nails, Screws, and Rivets	„	3,282	2,684	4,165	4,630	7,476
Wire	„	245	317	294	267	451
Beams, Pillars, Girders, and Bridgework		80	480	70	120	1,164
Pipes and Tubes	„	907	1,159	529	1,054	972
Rice-bowls	„	38	175	117	12	2
Other manufactures of wrought or cast iron, or of iron mixed with steel	„	2,097	812	135	150	347
	„	306,041	427,320	216,020	225,525	329,592
Lead:						
Ore	„	370	257	470	130	349
Pig	„	4,047	4,412	2,351	19,067	15,474
Wrought:						
Sheets, Pipes, and Tubes	„	45	95	113	89	52
Other sorts	„	443	317	406	388	438
Other sorts	„	190	175	240	560	1,200
	„	5,095	5,256	3,580	20,234	17,513
Quicksilver	Lbs.	4,505	3,251	4,283	4,710	7,329
Steel:						
Cast	Cwt.	5	1	32	9	19
Hoop	„	17	46	9	134	174
Other sorts	„	2,731	2,419	3,943	4,518	2,738
	„	2,753	2,466	3,984	4,661	2,931
Tin:						
Unwrought (block)	„	4,931	2,395	2,814	2,308	3,455
Wrought (including plates or sheets, not tinned iron)	„	4	1	2	2	5
	„	4,935	2,396	2,816	2,310	3,460
Zinc or Spelter:						
Unwrought	„	372	296	412	251	274
Wrought or manufactured	„	52	353	152	77	101
Other sorts	„	0	6	0	0	171
	„	424	655	564	328	546
Unenumerated	„	76	39	34	55	56
Total Metals	„	326,417	460,147	244,384	279,863	388,829
Hardware and Cutlery (including plated ware)		—	—	—	—	—

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
III.—METALS AND MANUFACTURES OF:					
Metals:					
Brass:					
Unwrought	0	6	0	0	0
Wrought	1,544	3,317	3,172	2,684	3,259
	1,544	3,323	3,172	2,684	3,259
Copper:					
Ore	0	0	0	0	200
Old, for re-manufacture	308	12	72	0	42
Unwrought:					
Tiles, Ingots, Cakes, and Bricks	23,082	24,168	21,559	39,864	55,434
Wrought:					
Lametta	519	151	0	263	34
Mixed or Yellow Metal, for sheathing	1,201	3,781	3,008	3,437	3,857
Sheets and other manufactures	12,643	55,502	42,305	62,196	73,771
	37,753	83,614	66,944	105,760	133,338
Iron:					
Ore	0	10	0	0	0
Old, for re-manufacture	47,188	73,089	31,457	29,890	45,932
Cast (pig)	28	63	0	375	2
Wrought:					
Anchors, Cables, and Kentledge	334	373	515	637	818
Bar	16,019	12,584	14,399	21,591	19,140
Angle, Bolt, and Rod	1,707	3,377	4,686	8,732	5,145
Sheets and Plates (including tinned plates)	6,157	4,983	3,232	11,110	18,296
Galvanised (other than wire)	4,308	6,570	6,518	4,249	7,367
Hoops	366	192	193	263	559
Nails, Screws, and Rivets	3,219	2,520	3,953	4,484	7,591
Wire	269	378	360	331	571
Beams, Pillars, Girders, and Bridgework	48	304	45	73	947
Pipes and Tubes	583	651	455	894	814
Rice-bowls	35	155	82	15	4
Other manufactures of wrought or cast iron, or of iron mixed with steel	1,689	477	123	240	298
	81,950	105,726	66,018	82,884	107,484
Lead:					
Ore	477	308	589	154	431
Pig	4,321	4,455	2,344	15,332	13,417
Wrought:					
Sheets, Pipes, and Tubes	77	115	154	132	64
Other sorts	625	401	554	549	662
Other sorts	133	122	168	532	975
	5,633	5,401	3,809	16,699	15,549
Quicksilver	685	523	781	736	1,132
Steel:					
Cast	14	3	66	24	30
Hoop	15	56	6	79	123
Other sorts	2,811	2,228	3,217	3,754	2,308
	2,840	2,287	3,289	3,857	2,461
Tin:					
Unwrought (block)	36,374	16,941	18,297	15,362	26,106
Wrought (including plates or sheets, not tinned iron)	41	13	25	28	45
	36,415	16,954	18,322	15,390	26,151
Zinc or Spelter:					
Unwrought	533	435	619	393	463
Wrought or manufactured	94	443	287	135	196
Other sorts	0	9	0	0	235
	627	887	906	528	894
Unenumerated	1,062	473	683	815	1,290
Total Metals	168,509	219,188	163,924	229,353	291,558
Hardware and Cutlery (including plated ware)	44,880	47,541	52,651	69,583	70,824

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
III.—METALS AND MANUFACTURES OF—*cont.*						
Machinery and Millwork:						
Steam-engines and parts:						
Locomotives (excluding those for railways)		—	—	—	—	—
Other sorts		—	—	—	—	—
Other sorts		—	—	—	—	—
IV.—CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:						
Chemicals:						
Alum	Cwt.	2,531	3,494	3,577	4,395	3,694
Arsenic	„	249	216	204	420	358
Copperas	„	1,898	2,201	1,711	3,249	2,106
Sal Ammoniac	„	668	1,142	1,149	880	993
Sulphur (Brimstone)	„	476	99	260	0	0
Sulphuric Acid	„	513	426	891	218	75
Other sorts	„	—	—	—	—	—
Drugs, Medicines and Narcotics:						
Aloes	Cwt.	487	413	237	579	975
Asafœtida	„	2,886	1,587	1,898	596	1,101
Camphor:						
Bhimsaini or Baras	Lbs.	30	0	0	0	28
Other sorts	„	39,569	27,830	49,434	60,637	36,717
Cassia lignea	Cwt.	4,411	6,556	6,944	7,234	6,005
Galangal	„	209	407	98	306	622
Quinine	Lbs.	474	758	1,024	635	619
Other sorts		—	—	—	—	—
Opium	Cwt.	0	0	0	0	0
Tobacco:						
Unmanufactured	Lbs.	0	15,596	300	11,657	704
Manufactured:						
Cigars	„	2,765	2,384	2,515	5,190	3,793
Other sorts	„	9,309	40,592	35,838	23,647	19,901
		12,074	58,572	38,653	40,494	24,398
Dyeing and Tanning Materials:						
Aniline and Alizarine Dyes	Ozs.	*	197,176†	686,292	808,736	1,117,704
Cochineal	Cwt.	76	36	51	60	75
Cutch	„	0	7	0	6	7
Gambier	„	177	289	377	377	332
Madder or Munjeet	„	644	653	545	586	998
Saffron	„	44	32	20	84	51
Other sorts	„	4,440	1,676	2,058	1,053	1,917
V.—OILS:						
Oils:						
Essential	Gals.	1	102	64	90	42
Mineral:						
Kerosine	„	535,016	258,634	748,312	699,143	358,750
Other sorts	„	1,491	455	732	12,600	41,789
Other sorts	„	10,340	8,033	10,320	18,287	11,869
Total Quantity of Oils	„	546,848	267,224	759,428	730,120	412,450
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:						
Canes and Rattans	Cwt.	1,740	5,521	1,231	1,295	2,508
Caoutchouc, raw	„	52	112	27	0	20
Coal:						
Coal	Tons	40	323	311	752	8
Coke	„	32	1	2	79	55
Cotton, raw	Cwt.	45	1,036	11,064	4,732	120

* Not stated. † Defective.

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891 92.	1892-93.
III.—METALS AND MANUFACTURES OF—*cont.*					
Machinery and Millwork:					
Steam-engines and parts:					
Locomotives (excluding those for railways)	0	0	0	0	0
Other sorts	5,914	3,018	4,479	4,927	7,217
Other sorts	4,702	4,445	7,162	3,878	9,059
	10,616	7,463	11,641	8,805	16,276
Total Value of Metals and Manufactures of	224,005	274,192	228,216	307,741	378,658
IV.—CHEMICALS DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
Chemicals:					
Alum	1,183	1,566	1,513	1,904	1,658
Arsenic	429	456	455	964	786
Copperas	862	1,370	1,041	1,672	961
Sal Ammoniac	1,904	3,361	3,271	2,530	2,993
Sulphur (Brimstone)	246	49	156	0	0
Sulphuric Acid	685	518	1,127	256	106
Other sorts	1,418	669	823	616	1,197
	6,727	7,989	8,386	7,942	7,701
Drugs, Medicines and Narcotics:					
Aloes	2,292	2,061	773	3,173	3,903
Asafœtida	4,775	2,676	2,634	1,455	3,212
Camphor:					
Bhimsaini or Baras	270	0	0	0	7
Other sorts	2,219	1,778	4,730	5,065	3,566
Cassia lignea	6,217	10,003	9,784	10,130	8,947
Galangal	174	315	82	234	586
Quinine	1,363	1,650	2,526	1,264	1,215
Other sorts	10,117	11,742	9,687	15,136	22,281
	27,427	30,225	30,216	36,457	43,717
Opium	1	0	0	0	0
Tobacco:					
Unmanufactured	0	435	150	1,135	185
Manufactured:					
Cigars	880	955	673	1,025	801
Other sorts	923	3,186	3,459	2,556	2,794
	1,803	4,576	4,282	4,716	3,780
Dyeing and Tanning Materials:					
Aniline and Alizarine Dyes	4,210	6,180	5,538	5,726	9,524
Cochineal	813	332	481	650	868
Cutch	0	19	0	11	15
Gambier	302	701	789	718	628
Madder or Munjeet	741	698	584	510	795
Saffron	6,880	3,969	3,223	8,940	5,215
Other sorts	6,417	3,186	4,366	2,211	4,439
	19,353	15,085	14,981	18,766	21,484
Total Value of Chemicals, Drugs, Medicines and Narcotics, and Dyeing and Tanning Materials	55,311	57,875	57,865	67,881	76,682
V.—OILS:					
Oils:					
Essential	20	112	103	146	80
Mineral:					
Kerosine	26,913	12,304	33,109	30,208	15,942
Other sorts	297	87	123	1,964	6,492
Other sorts	1,502	1,233	1,705	2,866	1,583
Total Value of Oils	28,732	13,736	35,040	35,184	24,097
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES:					
Canes and Rattans	1,619	5,622	1,881	2,214	4,170
Caoutchouc, raw	863	1,210	518	0	300
Coal:					
Coal	104	635	714	1,281	17
Coke	136	5	8	332	95
Cotton, raw	32	2,925	31,168	9,247	203

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India —*continued.*

ARTICLES.		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*						
Gums and Resins:						
Arabic	Cwt.	8,620	5,259	3,866	5,733	8,078
Benjamin	,,	1,206	1,125	620	968	902
Olibanum or Frankincense	,,	21,556	20,516	22,963	24,932	18,333
Rosin	,,	573	1,067	1,083	1,410	1,680
Other sorts	,,	4,231	1,456	3,378	5,537	8,580
	,,	36,186	29,423	31,910	38,580	37,573
Hides and Skins:						
Hides, raw	No.	80	0	8,000	467	0
	=Cwt.	6	0	1,000	60	0
Skins, raw	No.	0	0	0	3,650	120
	=Cwt.	0	0	0	86	3
Horns	Cwt.	459	332	406	386	236
Ivory, unmanufactured	Lbs.	393,239	218,776	258,010	261,124	192,273
Jewellery, &c.:						
Precious Stones and Pearls, unset		—	—	—	—	—
Lac, stick	Cwt.	28	2	2	6	0
Natural Curiosities		—	—	—	—	—
Pitch, Tar, and Dammer	Cwt.	1,080	1,344	1,676	2,010	1,410
Seeds:						
Rape	,,	0	0	1,800	10	0
Other sorts	,,	2,194	3,529	1,058	1,156	1,828
	,,	2,194	3,529	2,858	1,166	1,828
Shells and Cowries:						
Shells (chanks and large ornamental shells)	Cwt. & No.	30 660,087	110 846,401	1,453 0	1,856 0	5,702 0
Tortoise-shell (including Nakhla or Nakh)	Lbs.	5,669	8,094	7,957	9,231	11,039
Cowries	Cwt.	96	183	57	1,438	901
Silk, raw	Lbs.	111,832	116,261	145,298	119,319	109,141
Stone and Marble	Cwt.	122	118	1,056	274	92
Wax (excluding candles)	,,	186	214	173	68	4
Wood:						
Teak	Cubic Tons	8	60	113	10	8
Other Timber	Tons	469	536	342	602	490
Ornamental:						
Sandal		—	—	—	—	—
Ebony		—	—	—	—	—
Other sorts		—	—	—	—	—
Wool, raw	Lbs.	13,156,968	14,402,296	12,788,216	13,341,076	12,398,792
All other Articles		—	—	—	—	—
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:						
Yarns and Textile Fabrics:						
Cotton:						
Twist and Yarn	Lbs.	1,601,596	1,270,444	1,243,380	1,648,822	1,347,055
Manufactures:						
Piece goods:						
Grey (unbleached)	Yards	26,253,232	26,182,731	23,659,913	24,930,037	21,552,577
White (bleached)	,,	11,765,655	12,520,316	13,767,057	14,390,232	12,724,876
Coloured, Printed, or Dyed	,,	53,426,840	51,973,749	51,471,185	55,558,166	55,118,662
Handkerchiefs and Shawls in the piece	No.	1,804,823	1,559,423	1,750,577	1,869,406	1,795,635
Other sorts	Yards	983	0	0	0	0
Lace and Patent Net	,,	27,044	10,413	2,830	10,311	10,133
Hosiery, pure and mixed		—	—	—	—	—
Thread, sewing	Lbs.	73,604	78,166	98,171	147,943	132,852
Canvas	Yards	1,320	60	91	4,453	3,608
Other sorts	Lbs.	14,144	36,101	8,608	7,391	3,977

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VI.—RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
Gums and Resins :					
Arabic	51,337	20,629	10,970	12,106	16,404
Benjamin	4,193	3,748	2,142	3,153	3,192
Olibanum or Frankincense	41,989	43,951	40,187	42,152	32,626
Rosin	297	595	540	670	819
Other sorts	11,588	4,688	7,083	10,704	14,167
	109,404	73,611	60,922	68,785	67,208
Hides and Skins:					
Hides, raw	20	0	2,800	147	0
Skins, raw	0	0	0	467	6
Horns	5,287	4,186	4,659	4,508	2,991
Ivory, unmanufactured	209,180	125,543	149,457	150,468	111,144
Jewellery, &c.:					
Precious Stones and Pearls, unset	8,944	9,792	11,059	9,947	9,833
Lac, stick	67	5	6	23	0
Natural Curiosities	60	3	3	64	16
Pitch, Tar, and Dammer	468	581	792	825	556
Seeds :					
Rape	0	0	1,120	7	0
Other sorts	2,462	3,694	1,618	2,077	2,359
	2,462	3,694	2,738	2,084	2,359
Shells and Cowries :					
Shells (chanks and large ornamental shells)	9,350	10,292	5,776	9,733	33,372
Tortoise-shell (including Nakhla or Nakh)	3,472	6,294	4,802	5,540	6,466
Cowries	94	164	71	1,593	996
Silk, raw	42,745	33,951	40,024	37,498	37,225
Stone and Marble	137	212	691	181	242
Wax (excluding candles)	1,198	1,340	1,059	506	13
Wood:					
Teak	56	410	1,070	86	117
Other Timber	1,670	2,363	1,664	2,423	1,940
Ornamental:					
Sandal	243	215	30	35	28
Ebony	41	0	60	22	3
Other sorts	34	0	3	109	0
Wool, raw	619,527	693,527	624,681	630,839	597,718
All other Articles	1,511	841	1,081	771	1,070
Total Value of Raw Materials and Unmanufactured Articles	1,018,724	977,421	947,237	939,678	878,088
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED:					
Yarn and Textile Fabrics:					
Cotton:					
Twist and Yarn	111,514	91,382	83,801	113,665	90,822
Manufactures :					
Piece goods :					
Grey (unbleached)	356,614	376,386	345,872	354,596	314,880
White (bleached)	188,181	200,494	213,878	222,077	204,316
Coloured, Printed, or Dyed	1,107,944	1,093,100	1,094,214	1,171,875	1,151,082
Handkerchiefs and Shawls in the piece	33,896	35,202	35,054	39,310	32,795
Other sorts	12	0	0	0	0
Lace and Patent Net	498	319	89	297	265
Hosiery, pure and mixed	9,484	12,714	10,213	11,955	15,012
Thread, sewing	7,895	8,933	10,794	16,424	14,026
Canvas	40	1	3	115	174
Other sorts	604	109	376	515	329
	1,705,168	1,728,358	1,710,493	1,817,165	1,732,879

No. 10—*continued.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Flax:					
Twist and Yarn - - - - Lbs.	240	430	708	635	640
Manufactures:					
Piece goods - - - - Yards	1,458	9,977	8,709	6,680	4,078
Canvas - - - - - „	10,901	16,264	18,770	7,445	11,818
Other sorts (including bags and sacks) - - - - - Lbs.	9,721	5,764	7,170	3,095	5,442
Hemp:					
Manufactures (excluding cordage):					
Cloth - - - - - Yards	280	4,336	720	0	1,154
Jute:					
Manufactures - - - - - -	—	—	—	—	—
Silk:					
Manufactures:					
Thread for sewing, &c. - - Lbs.	131	0	39	649	258
Piece goods - - - Yards	585,021	564,152	644,352	693,135	703,355
Goods of silk mixed with other materials - - - - „	83,059	53,032	61,633	47,741	108,206
Other sorts - - - - Lbs.	0	0	4	0	0
Wool:					
Manufactures:					
Piece goods - - - - Yards	460,891	329,609	430,000	482,278	404,540
Shawls - - - - - No.	10,961	10,718	25,722	28,226	26,427
Braids - - - - - Lbs.	295	0	0	224	0
Other sorts - - - - „	251,116	317,214	227,555	171,586	87,652
Apparel (including haberdashery, millinery, boots and shoes, &c., but excluding hosiery) - -	—	—	—	—	—
Arms, Ammunition, &c. (excluding military accoutrements):					
Fire-arms and parts thereof - - -	—	—	—	—	—
Gunpowder, common - - - Lbs.	0	725	1,900	0	0
„ sporting - - - - „	13	141	250	30	60
Other sorts - - - - - -	—	—	—	—	—
Art, works of - - - - - -	—	—	—	—	—
Books and Printed Matter (including maps and charts) - - - - Cwt.	718	748	609	863	980
Building and Engineering Materials - -	—	—	—	—	—
Cabinet-ware and Furniture - - - -	—	—	—	—	—
Candles - - - - - Lbs.	63,483	107,117	99,869	129,627	273,049
Caoutchouc, manufactures of - - -	—	—	—	—	—
Carriages, Carts, &c. (excluding railway carriages), and parts thereof - - - -	—	—	—	—	—
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain) -	—	—	—	—	—
Clocks and Watches - - - - No.	3,113	4,383	2,432	3,723	4,750
Corals, Real - - - - - Lbs.	11,837	18,676	28,770	23,628	38,350
Cordage and Rope of vegetable fibre (excluding jute) - - - - Cwt.	267	277	313	353	240
Corks - - - - - - „	21	3	14	1	4
Earthenware and Porcelain - - - -	—	—	—	—	—
Fireworks - - - - - - -	—	—	—	—	—
Glass:					
Sheet and Plate - - - - Supl. Feet	246,959	138,304	118,967	320,110	159,130
Beads and False Pearls - - - Cwt.	1,976	2,017	2,080	1,942	1,919
Bottles, common - - - - „	1,291	687	877	860	791
Other ware - - - - - -	—	—	—	—	—

No. 11—*continued.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*continued.*

ARTICLES.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Yarns and Textile Fabrics—*cont.*					
Flax:					
Twist and Yarn	9	16	21	26	25
Manufactures:					
Piece goods	54	553	320	234	169
Canvas	425	585	601	305	436
Other sorts (including bags and sacks)	679	691	670	403	844
	1,158	1,829	1,591	942	1,449
Hemp:					
Manufactures (excluding cordage):					
Cloth	14	133	26	0	32
Jute:					
Manufactures	26	20	0	94	182
Silk:					
Manufactures:					
Thread for sewing, &c.	63	0	36	523	203
Piece goods	55,488	51,956	58,128	60,747	61,188
Goods of silk mixed with other materials	8,901	5,802	6,207	5,712	10,373
Other sorts	0	0	6	0	0
	64,452	57,758	64,677	66,982	71,764
Wool:					
Manufactures:					
Piece goods	42,818	32,922	44,935	53,856	44,326
Shawls	2,086	2,132	3,052	3,143	2,745
Braids	83	0	0	50	0
Other sorts	32,406	15,294	17,133	21,253	11,478
	77,393	50,348	65,120	78,302	58,549
Total Yarns and Textile Fabrics	1,959,734	1,929,844	1,925,729	2,077,176	1,955,702
Apparel (including haberdashery, millinery, boots and shoes, &c., but excluding hosiery)	91,293	103,457	102,503	100,038	118,608
Arms, Ammunition, &c. (excluding military accoutrements):					
Fire-arms and parts thereof	7,250	6,911	7,946	8,650	9,051
Gunpowder, common	0	29	63	0	0
,, sporting	1	20	25	6	9
Other sorts	660	762	2,195	477	1,464
	7,911	7,722	10,229	9,133	10,524
Art, works of	1,523	2,210	1,944	3,925	4,746
Books and Printed Matter (including maps and charts)	11,158	13,282	10,271	12,659	17,765
Building and Engineering Materials	457	1,933	1,505	1,100	643
Cabinet-ware and Furniture	6,371	7,717	7,342	10,481	10,405
Candles	2,032	3,465	3,103	4,123	9,734
Caoutchouc, manufactures of	772	1,058	1,442	825	750
Carriages, Carts, &c. (excluding railway carriages), and parts thereof	1,542	1,274	2,521	1,048	2,012
Chinese and Japanese-ware (including lacquered-ware, but not earthenware and porcelain)	5,390	5,335	4,981	5,494	4,262
Clocks and Watches	3,603	5,799	3,958	4,063	4,601
Corals, Real	12,567	16,618	23,982	18,752	29,115
Cordage and Rope of vegetable fibre (excluding jute)	624	830	788	868	691
Corks	319	84	176	15	46
Earthenware and Porcelain	19,528	23,472	19,935	30,258	32,998
Fireworks	1,019	1,078	1,227	1,557	2,197
Glass:					
Sheet and Plate	2,060	1,235	9,883	2,972	1,510
Beads and False Pearls	10,311	9,691	1,104	10,885	10,068
Bottles, common	817	747	1,124	1,009	1,061
Other ware	23,915	20,351	22,206	26,633	30,816
	37,103	32,024	34,317	41,499	43,455

No. 10—*concluded.*

QUANTITY of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*concluded.*

ARTICLES.		1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*						
Hides and Skins:						
Hides, dressed or tanned	No	0	40	22	0	0
	= Cwt.	0	3	3	0	0
Skins, dressed or tanned	No.	24,785	740	0	965	240
	= Cwt	240	8	0	11	1
Instruments and Apparatus:						
Musical		—	—	—	—	—
Photographic		—	—	—	—	—
Scientific, Philosophical, &c.		—	—	—	—	—
Ivory, manufactured		—	—	—	—	—
Jewellery, &c.:						
Jewellery		—	—	—	—	—
Plate		—	—	—	—	—
Leather:						
Unwrought	Cwt.	10	7	20	29	19
Manufactures of:						
Saddlery and Harness		—	—	—	—	—
Other sorts		—	—	—	—	—
Matches, lucifer and other		—	—	—	—	—
Mats	Sq. Yds.	14,895	41,511	17,089	20,414	23,509
Paints and Colours	Cwt.	3,364	3,180	4,632	3,493	5,170
Painters' Materials		—	—	—	—	—
Paper and Pasteboard						
Printing Paper	Cwt.	270	165	226	325	454
Writing Paper and Envelopes		—	—	—	—	—
Other sorts of Paper	Cwt.	120	161	223	208	174
Pasteboard, Millboard, &c.	,,	66	35	0	3	20
Perfumery (other than musk)		—	—	—	—	—
Printing and Lithographing materials (other than paper)		—	—	—	—	—
Soap	Cwt.	43	960	1,719	1,284	1,628
Stationery (excluding paper)		—	—	—	—	—
Toys and Requisites for Games		—	—	—	—	—
Umbrellas	No.	60,025	45,190	57,601	61,909	63,463
Wood, manufactures of		—	—	—	—	—
Articles (not specified) exported by Post		—	—	—	—	—
All other Articles		—	—	—	—	—

No. 11—*concluded.*

VALUE of EXPORTS of PRINCIPAL ARTICLES of FOREIGN MERCHANDISE from British India—*concluded.*

ARTICLES.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
VII.—ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
Hides and Skins:					
Hides, dressed or tanned	0	18	53	0	0
Skins, dressed or tanned	2,441	83	0	122	50
Instruments and Apparatus:					
Musical	3,726	4,823	3,833	8,866	5,827
Photographic	684	1,184	759	1,526	2,030
Scientific, Philosophical, &c.	2,586	6,071	4,059	3,489	3,635
	6,996	12,078	8,651	13,881	11,492
Ivory, manufactured	361	379	753	812	721
Jewellery, &c.:					
Jewellery	5,418	9,718	4,821	7,586	5,865
Plate	10,664	77	614	1,374	1,590
Leather:					
Unwrought	242	258	463	657	308
Manufactures of:					
Saddlery and Harness	1,538	1,812	2,091	1,883	2,827
Other sorts	820	1,444	1,090	1,812	2,942
	2,600	3,514	3,644	4,352	6,077
Matches, lucifer and other	5,806	5,630	8,426	7,977	14,640
Mats	718	738	652	724	838
Paints and Colours	4,120	4,078	6,746	5,321	5,725
Painters' Materials	1,180	1,896	1,367	1,322	1,703
Paper and Pasteboard:					
Printing Paper	638	427	592	545	895
Writing Paper and Envelopes	2,994	3,255	2,652	5,143	5,889
Other sorts of Paper	611	627	838	802	700
Pasteboard, Millboard, &c.	77	27	0	2	12
	4,320	4,336	4,082	6,492	7,496
Perfumery (other than musk)	8,363	4,907	4,834	6,132	5,921
Printing and Lithographing materials (other than paper)	1,311	499	1,659	141	3,526
Soap	1,983	1,630	2,548	2,312	3,281
Stationery (excluding paper)	6,591	7,131	8,202	9,927	12,558
Toys and Requisites for Games	4,899	4,659	5,155	5,739	4,908
Umbrellas	6,318	4,704	5,150	6,107	6,876
Wood, manufactures of	1,408	1,604	1,853	2,241	2,036
Articles (not specified) exported by Post	6,259	8,009	8,864	9,126	8,531
All other Articles	4,528	5,679	8,112	11,364	10,781
Total Value of Articles Manufactured and partly Manufactured	2,249,230	2,238,573	2,242,139	2,426,066	2,362,869
GRAND TOTAL	4,335,437	4,295,808	4,233,529	4,485,179	4,590,290

No. 12.

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES.

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
I. ANIMALS LIVING:					
HORSES:					
United Kingdom	No.	60	8,292	13	1,080
Aden	„	...	...	2	250
Ceylon	„	16	370	284	4,605
China, Hong Kong	„	...	...	2	110
Straits Settlements	„	2	80	406	6,635
Cape Colony	„	103	3,720		
Mauritius	„	...	...	61	348
Natal	„	3	120		
Australia	„	4,539	174,432	3	300
Austria	„	1	40	1	500
Germany	„	2	50		
Arabia	„	41	1,275		
Mekran and Sonmiani	„	...	...	5	10
Persia	„	533	16,920	1	80
Turkey in Asia	„	2,671	83,946		
Zanzibar	„	...	...	20	695
South America	„	3	60		
	„	7,974	289,305	798	14,613
OTHER SORTS:					
United Kingdom	No.	666	1,956	26	808
Aden	„	...	...	1	3
Ceylon	„	1,874	1,910	102,167	77,714
China, Hong Kong	„	7	6		
Straits Settlements	„	165	1,261	27,714	40,111
Cape Colony	„	247	4,922		
Mauritius	„	...	...	100	360
Australia	„	69	566	1,428	10,930
Austria	„	...	...	3	17
France	„	...	...	4	2
Germany	„	7	115	15	0
Italy	„	...	...	44	20
Turkey in Europe	„	...	...	54	70
Arabia	„	201	292		
Mekran and Sonmiani	„	126	187	5	1
Persia	„	25	43		
Sumatra	„	...	...	62	28
Turkey in Asia	„	2	100		
Egypt	„	...	...	2	100
Zanzibar	„	...	...	51	80
South America	„	1	10		
West Indies	„	...	...	3	55
	„	3,390	11,368	131,679	130,299
TOTAL ANIMALS LIVING	No.	11,364	300,673	132,477	144,912
II. ARTICLES OF FOOD AND DRINK:					
COFFEE:					
United Kingdom	Cwt.	104	586	132,692	960,666
Gibraltar	„	...	...	8	41
Aden	„	655	2,281	1	6
Ceylon	„	384	2,886	964	5,097
Straits Settlements	„	10,103	57,753		
Mauritius	„	...	...	4,416	20,074
Natal	„	...	...	2	10
Australia	„	...	...	960	6,929
Austria	„	...	...	21,386	162,128
Belgium	„	...	...	2,707	19,985
France	„	...	...	103,681	696,077
Germany	„	75	375	10,926	81,882
Holland	„	...	...	481	3,611
Italy	„	...	...	276	1,630
Arabia	„	13	58	8,084	48,252
Mekran and Sonmiani	„	...	...	79	555
Persia	„	...	...	5,958	33,457
Turkey in Asia	„	...	...	4,712	29,046
Abyssinia	„	1	1	444	2,885
Egypt	„	1	8	1,376	8,537
Mozambique	„	...	...	9	67
Réunion	„	...	...	3	16
Zanzibar	„	...	...	222	1,488
	„	11,336	63,948	299,387	2,082,439

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
FRUITS AND VEGETABLES:					
United Kingdom		—	915	—	7,331
Malta		—	354		
Aden		—	7	—	1,664
Ceylon		—	41,336	—	17,013
China, Hong Kong		—	5	—	7,475
Straits Settlements		—	63,255	—	17,427
Mauritius		—	12	—	725
Natal		...	...	—	219
Australia		—	317		
Austria		—	118	—	15
Belgium		...	...	—	2,100
France		—	448	—	4,796
Germany		—	5	—	29,047
Greece		—	2		
Italy		—	4,076	—	19
Arabia		—	12,496	—	671
China, Treaty Ports		—	1	—	24
Maldive Islands		—	9,721	—	15
Mekran and Sonmiani		—	3	—	333
Persia		—	272	—	1,236
Siam		...	...	—	56
Sumatra		...	...	—	18
Turkey in Asia		—	128	—	1,066
Abyssinia		...	...	—	27
Egypt		—	62	—	139
Madagascar		...	...	—	33
Mozambique		—	815	—	620
Zanzibar		—	9,204	—	2,823
South America		...	...	—	5
Other Countries		...	...	—	27
		—	143,552	—	94,924
GRAIN AND PULSE:					
RICE IN THE HUSK:					
United Kingdom	Cwt.	...	...	5	1
Ceylon	,,	340	118	513,748	125,642
Straits Settlements	,,	51	18	28,844	6,664
Mauritius	,,	...	...	2	1
Natal	,,	...	...	7	3
Maldive Islands	,,	...	...	4	1
Saigon	,,	...	...	178	40
Siam	,,	...	...	24	15
Turkey in Asia	,,	8,726	3,029		
United States	,,	31	10		
	,,	9,148	3,175	542,812	132,367
RICE NOT IN THE HUSK:					
United Kingdom	Cwt.	47	19	5,345,648	2,157,238
Gibraltar	,,	...	...	34,278	13,961
Malta	,,	...	...	199,781	70,344
Aden	,,	...	...	355,111	186,540
Ceylon	,,	333	207	4,104,011	1,985,669
China, Hong Kong	,,	21	12	7,703	3,113
Straits Settlements	,,	4,631	3,016	2,291,324	1,444,561
Cape Colony	,,	...	...	109,358	71,076
Mauritius	,,	...	...	1,115,743	569,277
Natal	,,	44	24	118,105	67,438
Canada	,,	...	...	117,698	35,623
Australia	,,	758	569	39,018	24,000
Austria	,,	...	...	500	239
Belgium	,,	...	...	159	92
France	,,	...	...	41,513	17,906
Germany	,,	...	...	510,161	213,385
Holland	,,	...	...	29	16
Italy	,,	1	2	203	123
Russia in Europe	,,	...	...	21,607	5,500
Spain	,,	...	...	12	5
Turkey in Europe	,,	...	...	4	4
Arabia	,,	...	...	870,420	472,053
China, Treaty Ports	,,	...	...	4,606	2,113
Java	,,	...	...	293	170
Maldive Islands	,,	...	...	26,965	12,275
Mekran and Sonmiani	,,	...	...	29,743	14,866
Persia	,,	85	82	249,522	134,063
Saigon	,,	...	...	26	11

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
GRAIN AND PULSE—*cont.*					
RICE NOT IN THE HUSK—*cont.*					
Siam	Cwt.	...	...	34,716	16,195
Sumatra	,,	... 17	... 9		
Turkey in Asia	,,	4	4	15,551	8,494
Abyssinia	,,	...	...	7,616	4,188
Egypt	,,	2	3	7,931,051	3,038,340
Madagascar	,,	...	...	3,634	1,929
Mozambique	,,	10	6	47,553	28,463
Réunion	,,	...	...	410,998	224,513
Zanzibar	,,	1	—	221,956	123,864
South America	,,	...	...	2,166,190	1,152,137
United States	,,	...	...	24,043	12,566
West Indies	,,	...	...	271,493	143,149
Other Countries	,,	...	...	37,171	18,353
	,,	5,954	3,953	27,395,513	12,274,352
WHEAT:					
United Kingdom	Cwt.	...	...	7,412,869	3,646,558
Gibraltar	,,	...	...	234,990	119,536
Aden	,,	...	...	18,803	10,616
Ceylon	,,	2	2	1,755	935
China, Hong Kong	,,	...	...	4,581	2,410
Straits Settlements	,,	...	...	5,741	2,793
Mauritius	,,	...	...	2,188	1,166
Natal	,,	...	...	1	1
Cape Colony	,,	...	...	1,774	859
Australia	,,	...	...	5	2
Belgium	,,	...	...	1,225,865	607,356
France	,,	...	...	1,724,108	893,154
Germany	,,	...	...	902,543	442,542
Holland	,,	...	...	386,469	180,373
Italy	,,	...	...	689,568	359,942
Portugal	,,	...	...	37,800	18,900
Spain	,,	...	...	163,910	89,200
Arabia	,,	589	305	58,509	30,601
Java	,,	...	...	15	8
Maldive Islands	,,	...	...	15	10
Mekran and Sonmiani	,,	...	...	2,856	1,179
Persia	,,	20	9	25,899	12,855
Turkey in Asia	,,	101,906	46,553	82	41
Abyssinia	,,	...	...	6,514	3,325
Egypt	,,	...	...	2,045,259	1,004,989
Mozambique	,,	6	4	291	169
Réunion	,,	...	...	6,300	3,384
Zanzibar	,,	...	...	4,722	2,697
South America	,,	...	...	10,014	4,779
Other Countries	,,	...	...	7	4
		102,523	46,873	14,973,453	7,440,384
OTHER SORTS	,,	183,499	68,358	1,988,647	717,990
TOTAL GRAIN AND PULSE:					
United Kingdom	Cwt.	245	172	13,156,939	5,929,833
Gibraltar	,,	...	...	269,268	133,497
Malta	,,	...	...	200,501	70,578
Aden	,,	5	5	551,886	259,859
Ceylon	,,	4,490	1,807	4,819,944	2,194,409
China, Hong Kong	,,	46	31	13,216	5,951
Straits Settlements	,,	7,280	4,802	3,005,841	1,475,123
Cape Colony	,,	...	...	111,452	72,128
Mauritius	,,	...	...	1,513,791	716,041
Natal	,,	51	28	131,367	73,570
Canada	,,	...	...	117,698	35,623
Australia	,,	1,153	796	42,334	25,528
Austria	,,	...	...	550	253
Belgium	,,	...	...	1,249,561	614,443
France	,,	...	...	1,765,621	911,060
Germany	,,	...	...	1,415,703	657,518
Holland	,,	...	...	386,498	180,389
Italy	,,	1	2	689,968	360,147
Portugal	,,	...	...	37,800	18,900

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
GRAIN AND PULSE—*cont.*					
TOTAL GRAIN AND PULSE—*cont.*					
Russia in Europe	Cwt.	...	...	21,607	5,500
Spain	,,	...	...	163,922	89,205
Turkey in Europe	,,	...	...	4	4
Arabia	,,	1,940	845	1,037,088	539,457
China, Treaty Ports	,,	...	...	4,606	2,113
Java	,,	...	...	320	183
Maldive Islands	,,	...	...	27,000	12,294
Mekran and Sonmiani	,,	3,097	1,261	59,573	24,095
Persia	,,	2,370	1,174	279,413	148,446
Saigon	,,	...	...	204	51
Siam	,,	...	...	34,800	16,247
Sumatra	,,	17	9	15	8
Turkey in Asia	,,	273,718	109,416	16,413	8,921
Abyssinia	,,	50	9	475,045	176,533
Egypt	,,	2	3	10,039,022	4,066,865
Madagascar	,,	49	12	3,660	1,940
Mozambique	,,	2,554	837	49,994	29,659
Réunion	,,	...	...	436,042	235,528
Zanzibar	,,	4,025	1,140	244,381	134,109
South America	,,	...	...	2,184,514	1,160,751
United States	,,	31	10	24,043	12,566
West Indies	,,	...	...	278,723	146,418
Other Countries	,,	...	...	40,098	19,350
	,,	301,124	122,359	44,900,425	20,565,093
LIQUORS:					
ALE, BEER, AND PORTER:					
United Kingdom	Gals.	2,923,218	423,263	1,694	342
Malta	,,	27	7		
Aden	,,	8	2		
Ceylon	,,	410	124	172	37
China, Hong Kong	,,	8	2	552	152
Straits Settlements	,,	1,286	284	2,420	381
Natal	,,	...	...	11	3
Australia	,,	48	10		
Austria	,,	1,153	300		
Belgium	,,	6,082	1,614		
France	,,	270	71		
Germany	,,	117,926	28,140	4	1
Holland	,,	2,458	754		
Arabia	,,	...	...	72	18
Mekran and Sonmiani	,,	...	...	44	14
Persia	,,	...	...	64	23
Egypt	,,	...	...	7	2
	,,	3,052,894	454,571	5,040	973
SPIRITS:					
BRANDY:					
United Kingdom	Gals.	113,744	95,628	8	13
Gibraltar	,,	56	50		
Aden	,,	18	27		
Ceylon	,,	338	185	86	131
China, Hong Kong	,,	12	13	57	40
Straits Settlements	,,	449	680	1	1
Australia	,,	59	55	9	13
Austria	,,	5	4		
Belgium	,,	7,403	2,387		
France	,,	106,912	85,408	1	1
Germany	,,	31,792	7,908		
Greece	,,	21	8		
Holland	,,	4,344	846		
Italy	,,	57	60		
Norway	,,	2,439	471		
Arabia	,,	1	1	123	57
Mekran and Sonmiani	,,	...	...	404	141
Persia	,,	...	...	621	353

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
BRANDY—*cont.*					
Russia in Asia	Gals.	4	5		
Turkey in Asia	„	...	...	61	17
Egypt	„	...	...	2	2
Zanzibar	„	11	7		
South America	„	...	...	164	223
West Indies	„	...	...	80	108
GIN:					
United Kingdom	Gals.	27,366	12,125		
Gibraltar	„	80	31		
Aden	„	24	54		
Ceylon	„	2	0		
China, Hong Kong	„	...	...	24	11
Straits Settlements	„	10,727	2,937		
Australia	„	5	1		
Belgium	„	5,338	1,636		
France	„	1	0		
Germany	„	17,574	4,392		
Holland	„	41,742	16,986		
Arabia	„	...	...	223	58
Mekran and Sonmiani	„	...	...	18	5
Russia in Asia	„	1	1		
RUM:					
United Kingdom	Gals.	6,931	3,320	1,209	151
Aden	„	3	3		
China, Hong Kong	„	...	...	6	2
Straits Settlements	„	6,080	1,552		
Mauritius	„	3	1		
Australia	„	...	...	80	10
Austria	„	58	10		
Belgium	„	...	1		
France	„	40	48		
Germany	„	1,181	321		
Arabia	„	8	6	122	25
Persia	„	...	...	9	3
Réunion	„	...	...	49	10
West Indies	„	10	4		
WHISKY:					
United Kingdom	Gals.	434,237	290,650	590	595
Aden	„	56	43	10	18
Ceylon	„	838	823		
China, Hong Kong	„	...	...	381	221
Straits Settlements	„	384	301	4	6
Australia	„	2,413	2,491		
France	„	236	232		
Germany	„	2,324	1,470		
Holland	„	94	26		
Arabia	„	...	...	220	94
Mekran and Sonmiani	„	...	...	171	111
Persia	„	...	...	541	453
Russia in Asia	„	1	1		
Abyssinia	„	...	...	9	8
Zanzibar	„	108	65		
OTHER SORTS	„	231,817	148,385	482	429
TOTAL SPIRITS:					
United Kingdom	Gals.	640,213	500,940	1,855	821
Gibraltar	„	138	84		
Aden	„	134	166	10	19
Ceylon	„	76,379	10,949	86	131
China, Hong Kong	„	2,492	451	564	354
Straits Settlements	„	34,335	9,419	112	96
Mauritius	„	4	4		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
SPIRITS—*cont.*					
TOTAL SPIRITS—*cont.*					
Natal	Gals.	—	1		
Australia	„	2,480	2,586	109	27
Austria	„	4,729	1,365		
Belgium	„	18,744	9,703		
France	„	108,339	88,562	1	1
Germany	„	116,904	30,585		
Greece	„	21	8		
Holland	„	46,248	17,956		
Italy	„	134	351		
Norway	„	2,439	471		
Sweden	„	4	3		
Arabia	„	36	25	766	305
Japan	„	1	2		
Mekran and Sonmiani	„	...	...	593	258
Persia	„	23	13	1,291	921
Russia in Asia	„	16	17		
Turkey in Asia	„	103	41	61	17
Abyssinia	„	...	...	9	8
Egypt	„	...	...	2	2
Réunion	„	...	...	49	10
Zanzibar	„	120	73	13	11
South America	„	...	...	164	222
United States	„	3,301	7,881		
West Indies	„	10	4	80	108
	„	1,057,347	681,660	5,765	2,311
WINES AND LIQUEURS:					
CHAMPAGNE:					
United Kingdom	Gals.	28,048	75,014	146	371
Gibraltar	„	31	78		
Aden	„	3	9	4	15
Ceylon	„	35	51		
China, Hong Kong	„	...	...	14	28
Straits Settlements	„	11	27	2	6
Australia	„	2	6	4	8
Austria	„	1	1		
Belgium	„	3,734	10,680		
France	„	4,595	9,208	8	30
Germany	„	305	644	—	1
Holland	„	8	10		
Italy	„	35	60		
Arabia	„	...	...	5	11
Persia	„	...	...	9	32
Turkey in Asia	„	1	3	8	26
CLARET:					
United Kingdom	Gals.	42,951	25,977	293	515
Gibraltar	„	133	60		
Malta	„	180	92		
Aden	„	1,128	407	4	2
Ceylon	„	1,213	727		
China, Hong Kong	„	49	15	60	29
Straits Settlements	„	1,314	705	12	3
Australia	„	1,515	693		
Austria	„	974	536		
Belgium	„	101	42		
France	„	37,658	15,726	75	54
Germany	„	453	272	7	5
Greece	„	48	35		
Holland	„	438	275		
Italy	„	3,162	1,049		
Portugal	„	39	18		
Spain	„	92	32		
Arabia	„	...	...	8	5
Persia	„	...	...	13	10
Turkey in Asia	„	35	10	7	6
Egypt	„	376	98		
Réunion	„	...	...	47	8
Zanzibar	„	50	13		

No. 12—*continued.*

Quantity and Value of Imports and Exports of Principal Articles in 1892-93, distinguishing Countries—*continued.*

Articles and Countries.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
II. Articles of Food and Drink—*cont.*					
Liquors—*cont.*					
Wines and Liqueurs—*cont.*					
Port :					
United Kingdom	Gals.	71,288	58,139	91	121
Gibraltar	„	3,821	4,096		
Aden	„	53	41	32	41
Ceylon	„	3	3	32	38
China Hong Kong	„	...	...	12	13
Straits Settlements	„	3	4	14	15
Belgium	„	172	53		
France	„	412	289		
Germany	„	6,442	2,545		
Holland	„	80	34		
Italy	„	48	51		
Portugal	„	454	635		
Spain	„	172	100		
Arabia	„	2	2	49	55
Mekran and Sonmiani	„	...	...	12	8
Persia	„	...	...	88	94
Russia in Asia	„	3	5		
Turkey in Asia	„	...	...	2	3
Sherry :					
United Kingdom	Gals.	25,558	21,610	278	290
Gibraltar	„	3,323	2,672		
Malta	„	1,023	637		
Aden	„	16	14	24	29
Ceylon	„	...	...	4	4
China, Hong Kong	„	...	...	36	39
Straits Settlements	„	194	90		
Belgium	„	3	2		
France	„	384	173		
Germany	„	2,127	431		
Holland	„	20	8		
Italy	„	594	241		
Arabia	„	1	1	13	11
Mekran and Sonmiani	„	...	...	12	9
Persia	„	91	69	116	104
Russia in Asia	„	2	1		
Turkey in Asia	„	...	...	28	23
Other Sorts	„	103,536	74,856	540	523
Total Wines and Liqueurs :					
United Kingdom	Gals.	215,275	222,694	956	1,501
Gibraltar	„	7,878	7,346		
Malta	„	1,577	954		
Aden	„	8,131	3,023	66	89
Ceylon	„	4,646	2,450	96	70
China, Hong Kong	„	55	19	269	228
Straits Settlements	„	3,886	2,019	42	33
Cape Colony	„	14	4		
Mauritius	„	121	61		
Natal	„	61	31		
Australia	„	4,302	2,017	5	9
Austria	„	4,477	2,683		
Belgium	„	5,128	11,756		
France	„	66,220	40,473	89	89
Germany	„	11,478	5,202	48	42
Greece	„	371	222		
Holland	„	2,910	2,806		
Italy	„	10,067	4,302		
Portugal	„	493	653		
Spain	„	264	132		
Sweden	„	22	11		
Turkey in Europe	„	5	6		
Arabia	„	3	3	95	99
China, Treaty Ports	„	49	15		
Java	„	...	...	28	60
Mekran and Sonmiani	„	...	...	33	22
Persia	„	494	291	262	264
Russia in Asia	„	7	8		
Saigon	„	3	2		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93. distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
LIQUORS—*cont.*					
WINES AND LIQUEURS—*cont.*					
TOTAL WINES AND LIQUEURS—*cont.*					
Turkey in Asia	Gals.	73	32	51	62
Egypt	„	453	124		
Réunion	„	...	...	47	8
Zanzibar	„	80	36	22	9
	„	348,543	309,375	2,109	2,585
OTHER SORTS	„	3,342	1,657	16	8
TOTAL LIQUORS:					
United Kingdom	Gals.	3,782,001	1,148,509	4,505	2,664
Gibraltar	„	8,016	7,430		
Malta	„	1,604	961		
Aden	„	8,273	3,191	76	108
Ceylon	„	81,435	13,524	354	237
China, Hong Kong	„	2,555	472	1,385	734
Straits Settlements	„	39,514	11,724	2,584	516
Cape Colony	„	14	4		
Mauritius	„	125	65		
Natal	„	61	32	11	3
Australia	„	6,830	4,613	114	36
Austria	„	10,359	4,349		
Belgium	„	29,954	23,073		
France	„	174,829	129,106	90	90
Germany	„	246,348	63,968	52	43
Greece	„	392	231		
Holland	„	51,616	21,516		
Italy	„	10,201	4,652		
Norway	„	2,439	471		
Portugal	„	493	653		
Spain	„	264	132		
Sweden	„	26	14		
Turkey in Europe	„	5	6		
Arabia	„	39	28	933	422
China, Treaty Ports	„	49	15		
Japan	„	1	2		
Java	„	...	...	28	60
Mekran and Sonmiani	„	...	...	670	293
Persia	„	517	305	1,617	1,208
Russia in Asia	„	23	24		
Saigon	„	3	2		
Turkey in Asia	„	176	73	118	82
Abyssinia	„	...	...	9	8
Egypt	„	453	124	9	5
Réunion	„	...	...	96	18
Zanzibar	„	200	109	35	20
South America	„	...	...	164	222
United States	„	3,301	7,881		
West Indies	„	10	4	80	108
	„	4,462,126	1,447,263	12,930	6,877
PROVISIONS:					
United Kingdom		—	678,375	—	72,998
Gibraltar		—	1	—	16
Malta		—	7	—	10
Aden		—	8,705	—	90,759
Ceylon		—	6,753	—	176,040
China, Hong Kong		—	17,290	—	101,413
Straits Settlements		—	390,783	—	113,153
Cape Colony		—	31	—	660
Mauritius		—	247	—	126,355
Natal		—	90	—	14,039
Canada		...	...	—	13
Australia		—	1,834	—	15,921
Austria		—	2,323	—	904
Belgium		—	2,840	—	19,665
Denmark		—	287		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
PROVISIONS—*cont.*					
France		—	13,061	—	1,633
Germany		—	7,757	—	9,486
Greece		—	42		
Holland		—	5,465	—	212
Italy		—	8,980	—	5,916
Spain		—	91	—	28
Sweden		—	46	—	2
Turkey in Europe		—	52	—	161
Arabia		—	191,780	—	49,710
China, Treaty Ports		—	392	—	952
Japan		—	136	—	263
Java		...	...	—	1,023
Maldive Islands		—	427	—	209
Mekran and Sonmiani		—	54,583	—	2,325
Persia		—	225,781	—	11,291
Siam		—	117	—	1,119
Sumatra		...	...	—	5
Turkey in Asia		—	240,089	—	6,401
Abyssinia		—	58	—	20,776
Egypt		—	212	—	11,814
Madagascar		—	9	—	88
Mozambique		—	50	—	17,959
Réunion		...	...	—	3,558
Zanzibar		—	1,899	—	41,677
South America		...	...	—	766
United States		—	1,218	—	647
West Indies		...	...	—	460
Other Countries		—	244	—	1,643
		—	1,862,055	—	922,067
SALT:					
United Kingdom	Tons	241,061	408,983		
Aden	,,	37,282	47,616		
Ceylon	,,	...	11	0	2
China, Hong Kong	,,	—	...	0	10
Straits Settlements	,,	7	45	478	165
Natal	,,	...	...	50	75
France	,,	—	1		
Germany	,,	47,391	71,430		
Arabia	,,	25,887	35,677		
Persia	,,	1,810	2,418		
Russia in Asia	,,	—	1		
Siam	,,	—	1		
Turkey in Asia	,,	...	...	0	2
Egypt	,,	5,950	8,099		
South America	,,	654	2,412		
	,,	360,042	576,694	528	254
SPICES:					
United Kingdom	Lbs.	30	25	3,562,023	116,916
Gibraltar	,,	...	...	11,676	326
Aden	,,	78,162	866	1,792,796	49,356
Ceylon	,,	10,039,148	161,877	5,220,735	50,995
China, Hong Kong	,,	79,276	946	544,807	10,624
Straits Settlements	,,	33,283,579	373,126	2,679,620	28,610
Mauritius	,,	15,232	109	640,759	6,377
Natal	,,	25	1	60,953	1,604
Australia	,,	...	...	12,572	292
Austria	,,	168	1	267,120	8,745
Belgium	,,	...	...	74,200	1,510
France	,,	...	...	6,545,525	132,526
Germany	,,	...	...	804,742	19,373
Italy	,,	...	...	373,248	7,181
Turkey in Europe	,,	...	...	16,178	648
Arabia	,,	29,400	304	1,071,299	29,020
China, Treaty Ports	,,	...	...	18,648	374
Japan	,,	120,639	1,881	39,389	959
Maldive Islands	,,	...	...	3,359	39
Mekran and Sonmiani	,,	499	8	28,980	494
Persia	,,	...	...	1,186,289	27,121
Siam	,,	1,643	9	5,733	78
Sumatra	,,	29,176	194		

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
SPICES—*cont.*					
Turkey in Asia	Lbs.	80	8	1,161,596	25,149
Abyssinia	„	...	..	226,520	2,762
Egypt	„	...	...	559,613	14,760
Madagascar	„	...	...	504	14
Mozambique	„	...	...	102,431	1,333
Réunion	„	...	...	18,399	171
Zanzibar	„	4,853,998	84,023	213,222	5,241
South America	„	...	...	8,785	141
United States	„	...	...	56,839	2,313
West Indies	„	...	...	168	7
Other Countries	„	15,568	195	840	20
	„	48,546,623	623,633	27,349,568	545,089
SUGAR (REFINED, UNREFINED, and SUGAR CANDY):					
United Kingdom	Cwt.	21,742	31,875	699,438	386,487
Aden	„	69	131	37,273	44,190
Ceylon	„	4,921	5,940	40,373	43,720
China, Hong Kong	„	349,093	475,513	15,071	14,971
Straits Settlements	„	129,606	181,994	600	525
Mauritius	„	1,078,558	1,423,719	42	78
Natal	„	227	131	48	69
Austria	„	27,698	42,322		
Belgium	„	2,107	2,787		
France	„	317	600		
Germany	„	255,788	367,336		
Italy	„	904	1,648		
Arabia	„	35	23	39,804	52,509
China, Treaty Ports	„	3	9		
Java	„	80,379	80,531		
Maldive Islands	„	1	2	349	500
Mekran and Sonmiani	„	35	19	1,611	2,164
Persia	„	227	150	128,697	187,506
Siam	„	...	...	142	85
Turkey in Asia	„	12	8	37,245	53,378
Abyssinia	„	...	...	509	703
Egypt	„	...	...	50,538	30,367
Madagascar	„	...	...	35	55
Mozambique	„	...	...	6,068	8,698
Réunion	„	7,840	10,692		
Zanzibar	„	256	253	6,634	9,617
South America	„	...	...	2	4
Other Countries	„	...	...	321	369
	„	1,959,818	2,625,683	1,064,900	835,995
TEA:					
United Kingdom	Lbs.	19,267	1,570	108,513,844	5,992,593
Gibraltar	„	180	15	1,832	183
Malta	„	...	...	1,822	108
Aden	„	202	10	25,040	1,211
Ceylon	„	633,596	29,518	139,184	6,089
China, Hong Kong	„	644,765	41,769	71,463	4,016
Straits Settlements	„	464,518	16,648	152,076	3,537
Cape Colony	„	...	...	19,636	1,180*
Mauritius	„	40	4	7,076	269
Natal	„	...	...	3,704	368
Australia	„	...	...	3,908,143	166,941
Canada	„	...	...	38,818	1,841*
Austria	„	...	...	9,897	867
Belgium	„	...	...	995	50*
France	„	...	...	15,382	904
Germany	„	...	...	159,301	8,066*
Holland	„	...	...	15,909	816*
Italy	„	...	...	2,717	257*
Spain	„	...	...	100	8*
Turkey in Europe	„	...	...	26,546	1,518
Arabia	„	337	17	115,969	8,949
China, Treaty Ports	„	4,150,708	342,554	300	20*
Java	„	107,100	11,078	20	1*
Japan	„	2,030	128	148	12*
Mekran and Sonmiani	„	...	...	974	96

* The exports marked with an asterisk are entirely of Indian tea. Of the value of exports to the United Kingdom, Rx. 5,992,543 represents Indian tea.

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
II. ARTICLES OF FOOD AND DRINK—*cont.*					
TEA—*cont.*					
Persia	Lbs.	40	20	4,647,388	401,142
Siam	,,	...	...	540	37*
Turkey in Asia	,,	100	5	140,829	12,483
Abyssinia	,,	...	...	1,440	92
Egypt	,,	...	...	7,011	557
Mozambique	,,	...	...	28,876	2,192
Zanzibar	,,	...	...	20,205	1,072
South America	,,	...	...	2,918	146*
United States	,,	...	...	49,957	2,805*
West Indies	,,	...	...	480	24*
Other Countries	,,	...	...	614	49
		6,022,883	443,336	118,131,184	6,620,499
OTHER SORTS		—	42,295	—	1
TOTAL ARTICLES OF FOOD AND DRINK		—	7,950,819	—	31,673,238
III. METALS AND MANUFACTURES OF:					
METALS:					
BRASS:					
United Kingdom	Cwt.	10,148	54,027	888	11,748
Gibraltar	,,	...	...	29	409
Malta	,,	...	...	44	508
Aden	,,	97	278	166	1,040
Ceylon	,,	200	767	515	2,986
China, Hong Kong	,,	63	714	5	39
Straits Settlements	,,	200	2,166	145	984
Mauritius	,,	253	674	134	794
Natal	,,	...	...	219	1,390
Australia	,,	...	...	16	89
Austria	,,	525	5,769	10	144
Belgium	,,	421	3,041		
France	,,	13	189	98	1,411
Germany	,,	364	3,075	23	371
Arabia	,,	97	255	461	4,417
China, Treaty Ports	,,	3	38		
Java	,,	...	...	—	7
Maldive Islands	,,	...	...	2	11
Persia	,,	7	100	179	913
Siam	,,	...	...	1	21
Turkey in Asia	,,	...	...	28	158
Abyssinia	,,	...	...	1	6
Egypt	,,	1	10	51	616
Madagascar	,,	20	59		
Mozambique	,,	7	22	35	189
Zanzibar	,,	69	192	401	2,162
South America	,,	...	...	3	16
United States	,,	...	...	111	3,813
West Indies	,,	...	...	7	50
COPPER:					
United Kingdom	,,	351,466	1,425,678	16,318	58,400
Gibraltar	,,	...	...	1	6
Aden	,,	145	561	1,319	6,473
Ceylon	,,	10,841	44,223	451	2,497
China, Hong Kong	,,	34,115	129,016	20	135
Straits Settlements	,,	257	1,437	445	2,623
Cape Colony	,,	36	120		
Mauritius	,,	644	1,827	42	288
Natal	,,	86	253	13	92
Australia	,,	5,940	24,473		
Austria	,,	1,810	36,497	1	25
Belgium	,,	9,373	40,061		
France	,,	1,112	24,815	3	69
Germany	,,	610	7,217	6	122
Italy	,,	178	3,723		
Turkey in Europe	,,	...	...	3	10
Arabia	,,	209	1,301	2,163	11,153
China, Treaty Ports	,,	3	46	—	3
Japan	,,	1,739	6,820		
Maldive Islands	,,	10	35	5	27
Mekran and Sonmiani	,,	2	10	25	129
Persia	,,	14	63	13,675	59,388
Siam	,,	...	...	1	5
Turkey in Asia	,,	...	...	1,721	7,508

* The exports marked with an asterisk are entirely of Indian tea. Of the value of exports to the United Kingdom, Rx. 5,992,543 represents Indian tea.

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
III. METALS, AND MANUFACTURES OF—*cont.*					
COPPER—*cont.*					
Abyssinia	Cwt.	1	3	—	2
Egypt	„	12	48	11	164
Madagascar	„	17	62		
Mozambique	„	16	52	74	407
Réunion	„	326	892		
Zanzibar	„	1,636	19,125	507	2,781
South America	„	160	385	—	2
United States	„	...	...	1	7
Other Countries	„	4	14	62	415
IRON :					
United Kingdom	„	2,382,578	1,784,152	20,903	5,594
Aden	„	234	59	9,360	7,012
Ceylon	„	14,725	3,170	4,473	3,356
China, Hong Kong	„	1	1	54,314	10,622
Straits Settlements	„	3,892	5,575	2,096	994
Cape Colony	„	1,060	159		
Mauritius	„	300	149	19,711	21,928
Natal	„	330	84	92	113
Australia	„	20	38	2	2
Belgium	„	1,153,411	597,912	215	124
France	„	74	52		
Germany	„	34,727	27,826	46	12
Holland	„	735	735		
Italy	„	...	...	136,439	21,859
Norway	„	1,471	1,323		
Sweden	„	1,956	1,637		
Arabia	„	64	26	10,646	7,989
China, Treaty Ports	„	222	260	8,578	1,380
Japan	„	3	2	720	396
Maldive Islands	„	13	3	121	110
Mekran and Sonmiani	„	21	9	917	699
Persia	„	33	21	18,991	13,868
Siam	„	...	...	24	24
Sumatra	„	3	3		
Turkey in Asia	„	246	186	8,029	5,634
Abyssinia	„	...	...	28	28
Madagascar	„	...	...	50	50
Mozambique	„	...	...	3,247	2,770
Réunion	„	60	5	100	150
Zanzibar	„	60	47	5,551	4,688
United States	„	...	...	37,100	7,580
Other Countries	„	...	...	269	264
LEAD :					
United Kingdom	„	94,824	137,064	11,253	9,091
Aden	„	...	...	42	50
Ceylon	„	1,045	1,368	56	73
Straits Settlements	„	6	6	2,885	2,213
Mauritius	„	92	80	31	53
Natal	„	...	...	1	1
Austria	„	2	6		
Belgium	„	1,590	1,896		
France	„	13,903	13,478		
Germany	„	117	198	40	100
Holland	„	30	217		
Italy	„	1,466	1,391		
Arabia	„	...	...	1,417	1,321
Mekran and Sonmiani	„	...	...	56	57
Persia	„	...	...	2,432	2,614
Turkey in Asia	„	1	1	1,936	2,022
Egypt	„	—	2		
Mozambique	„	...	...	421	397
Zanzibar	„	...	...	40	47
QUICKSILVER :					
United Kingdom	Lbs.	293,425	44,797		
Aden	„	...	...	302	45
Ceylon	„	750	120	299	47
China, Hong Kong	„	13,125	1,969		
Straits Settlements	„	14	4		
Austria	„	43,475	5,806		
Germany	„	7,500	1,068		
Italy	„	750	110		
Arabia	„	...	...	1,080	161
Persia	„	...	...	2,944	471
Turkey in Asia	„	...	...	2,704	408

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
III. METALS, AND MANUFACTURES OF—*cont.*					
STEEL:					
United Kingdom	Cwt.	270,751	199,566	35	33
Aden	„	13	10	1,379	1,107
Ceylon	„	...	...	48	42
Straits Settlements	„	22	22		
Belgium	„	283,817	152,045		
Germany	„	66,712	33,252		
Sweden	„	240	288		
Arabia	„	...	...	360	316
Java	„	...	...	20	15
Mekran and Sonmiani	„	...	...	36	33
Persia	„	1	1	471	409
Turkey in Asia	„	...	...	447	397
Mozambique	„	...	...	6	5
Zanzibar	„	...	...	129	104
TIN:					
United Kingdom	„	889	7,223		
Aden	„	...	...	29	236
Ceylon	„	116	198	35	114
China, Hong Kong	„	19	206	45	335
Straits Settlements	„	36,576	288,377	962	5,739
Mauritius	„	...	...	265	1,882
Austria	„	3	30		
Arabia	„	...	...	457	3,463
Mekran and Sonmiani	„	...	...	9	83
Persia	„	...	...	1,570	11,978
Turkey in Asia	„	...	...	983	7,380
Egypt	„	...	...	5	45
Mozambique	„	...	...	8	63
Zanzibar	„	...	...	67	524
ZINC OR SPELTER:					
United Kingdom	„	102,291	158,216	—	1
Aden	„	4	4	49	91
Ceylon	„	230	250	19	29
China, Hong Kong	„	...	...	90	117
Straits Settlements	„	1	3	131	174
Mauritius	„	...	...	16	26
Belgium	„	9,779	20,777		
Germany	„	3,300	6,356		
Arabia	„	...	...	22	43
Mekran and Sonmiani	„	...	...	5	8
Persia	„	...	...	128	233
Turkey in Asia	„	...	...	40	72
Madagascar	„	4	5		
Mozambique	„	...	...	16	34
Réunion	„	93	187		
Zanzibar	„	80	79	30	66
OTHER METALS	„	5,164	41,774	20,197	7,216
TOTAL METALS:					
United Kingdom	„	3,219,338	3,831,183	69,400	89,707
Gibraltar	„	...	...	37	553
Malta	„	...	...	49	586
Aden	„	493	913	12,548	16,117
Ceylon	„	27,167	50,113	5,693	9,756
China, Hong Kong	„	34,318	131,953	54,474	11,247
Straits Settlements	„	41,139	301,455	6,687	12,920
Cape Colony	„	1,096	279		
Mauritius	„	1,289	2,729	20,207	25,082
Natal	„	416	337	328	1,659
Australia	„	5,960	24,511	18	91
Austria	„	3,021	57,472	13	260
Belgium	„	1,458,921	820,290	215	124
France	„	15,151	40,135	105	1,689
Germany	„	106,022	80,613	115	604
Holland	„	765	952		
Italy	„	1,856	5,468	136,439	21,859
Norway	„	1,471	1,323		
Sweden	„	2,196	1.925		
Turkey in Europe	„	...	...	3	10
Arabia	„	370	1,582	15,535	28,865
China, Treaty Ports	„	228	344	8,578	1,383
Japan	„	1,742	6,822	722	446

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
III. METALS, AND MANUFACTURES OF—*cont.*					
TOTAL METALS—*cont.*					
Java	Cwt.	...	...	20	22
Maldive Islands	„	23	37	128	149
Mekran and Sonmiani	„	23	19	1,072	1,194
Persia	„	55	184	37,473	89,942
Siam	„	...	...	26	50
Sumatra	„	3	3		
Turkey in Asia	„	247	187	13,209	23,583
Abyssinia	„	1	3	29	35
Egypt	„	13	60	73	922
Madagascar	„	41	126	50	50
Mozambique	„	23	74	3,807	3,864
Réunion	„	479	1,083	100	150
Zanzibar	„	1,845	19,443	6,742	10,696
South America	„	160	385	3	18
United States	„	...	...	3,7212	11,400
West Indies	„	...	...	7	50
Other Countries	„	4	14	331	679
	„	4,925,876	5,382,017	431,448	365,762
HARDWARE AND CUTLERY (including plated ware):					
United Kingdom		—	1,003,314	—	16,624
Gibraltar		—	10	—	60
Malta		—	45	—	27
Aden		—	326	—	3,046
Ceylon		—	2,017	—	2,883
China, Hong Kong		—	1,315	—	457
Straits Settlements		—	3,404	—	11,878
Cape Colony		—	23	—	15
Mauritius		—	33	—	3,677
Natal		—	43	—	1,272
Australia		—	1,459	—	143
Austria		—	42,667	—	50
Belgium		—	61,233	—	549
France		—	8,913	—	232
Germany		—	79,432	—	607
Holland		—	360		
Italy		—	4,046	—	5
Sweden		—	401		
Turkey in Europe		...	...	—	7
Arabia		—	130	—	3,316
China, Treaty Ports		—	90	—	32
Japan		—	2,946		
Java		—	5	—	197
Maldive Islands		...	...	—	26
Mekran and Sonmiani		—	9	—	194
Persia		—	302	—	7,357
Siam		...	...	—	161
Sumatra		...	...	—	12
Turkey in Asia		—	49	—	8,641
Abyssinia		...	...	—	103
Egypt		—	585	—	113
Madagascar		...	...	—	5
Mozambique		—	1	—	7,566
Zanzibar		—	215	—	5,667
South America		...	...	—	70
United States		—	4,381	—	5,548
Other Countries		...	...	—	192
		—	1,217,754	—	80,732
MACHINERY AND MILLWORK:					
United Kingdom		—	2,342,401	—	11,834
Aden		—	76	—	11
Ceylon		—	5,339	—	893
China, Hong Kong		...	...	—	30
Straits Settlements		—	49	—	2,087
Mauritius		—	31	—	55
Australia		—	16	—	14
Austria		—	2,565	—	33
Belgium		—	2,763		
France		—	192	—	240
Germany		—	4,098		
Italy		—	529		
Japan		...	...	—	792

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
III. METALS, AND MANUFACTURES OF—*cont.*					
MACHINERY AND MILLWORK—*cont.*					
Persia		—	20	—	346
Turkey in Asia		...	...	—	5
Egypt		...	...	—	30
Mozambique		...	...	—	200
United States		—	1,024		
		—	2,359,103	—	16,570
RAILWAY PLANT AND ROLLING STOCK (other than Government Stores):					
United Kingdom		—	1,020,615		
Straits Settlements		—	5,150		
Belgium		—	7,174		
		—	1,032,939		
TOTAL METALS AND MANUFACTURES OF		—	9,991,813	—	463,065
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS:					
CHEMICALS:					
United Kingdom		—	267,311	—	282
Aden		—	2,337	—	1,732
Ceylon		—	214	—	1,183
China, Hong Kong		—	272	—	116
Straits Settlements		—	1,229	—	1,490
Mauritius		...	2	—	5,319
Natal		...	...	—	4
Australia		—	333		
Austria		—	1,006		
Belgium		—	3,015	—	6
France		—	4,446		
Germany		—	17,845	—	5
Holland		—	20		
Italy		—	2,723		
Norway		—	85		
Turkey in Europe		...	...	—	386
Arabia		—	5,500	—	1,604
Japan		—	136		
Mekran and Sonmiani		—	2	—	119
Persia		—	38	—	2,378
Turkey in Asia		...	...	—	2,240
Abyssinia		...	...	—	131
Egypt		...	...	—	42
Mozambique		...	...	—	20
Zanzibar		—	41	—	417
United States		—	1,094		
		—	307,649	—	17,474
DRUGS, MEDICINES, AND NARCOTICS:					
CINCHONA BARK:					
United Kingdom	Lbs.	...	...	2,788,885	84,968
Ceylon	„	...	...	24,752	930
	„	...	...	2,813,637	85,898
QUININE:					
United Kingdom	Lbs.	30,267	35,872		
Aden	„	...	...	2	20
Mauritius	„	19	36	19	38
Austria	„	62	88		
Belgium	„	520	650		
France	„	42	50		
Germany	„	927	1,141		
Italy	„	315	450		
Persia	„	...	...	578	1,135
Turkey in Asia	„	...	...	10	22
Madagascar	„	6	10		
	„	32,158	38,297	619	1,215
OPIUM:					
United Kingdom	Lbs.	237	393		
	Cwt.	...	...	25	1,990
Ceylon	„	...	...	185	16,094
China, Hong Kong	„	...	...	53,449	4,668,078
Straits Settlements	„	...	...	18,492	1,570,012
Mauritius	„	...	...	77	6,996

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont*					
OPIUM—*cont.*					
Natal	Cwt.	...	...	5	535
Austria	Lbs.	2	2	1	115
Belgium	„	—	2		
Germany	„	9	21		
China, Treaty Ports	Cwt.	...	...	28,319	2,649,500
Java	„	...	...	659	55,600
Philippines	„	...	...	248	21,805
Saigon	„	...	...	3,183	262,948
Réunion	„	...	...	2	140
Mozambique	„	...	...	1	116
Zanzibar	„	...	...	12	1,085
	Lbs.	248	418		
	Cwt.	...	...	104,658	9,255,014
TOBACCO:					
UNMANUFACTURED:					
United Kingdom	Lbs.	3,196	1,026		
Malta	„	700	132		
Aden	„	...	...	6,991,285	80,320
Ceylon	„	718,828	7,610	213,950	3,772
China, Hong Kong	„	...	...	4,898	52
Straits Settlements	„	91,071	3,742	1,415,572	14,816
Mauritius	„	...	...	348,768	7,220
Natal	„	...	...	15,722	606
Belgium	„	843	210	432,500	2,193
France	„	504	12		
Germany	„	2,955	634	893	6
Holland	„	28,634	5,020	2,140,000	8,125
Turkey in Europe	„	21,040	1,128		
Arabia	„	13	0	503	7
China, Treaty Ports	„	...	...	92,288	856
Japan	„	9,212	2,846		
Java	„	14,424	3,964		
Maldive Islands	„	...	...	3,359	68
Mekran and Sonmiani	„	738	9	42,567	353
Persia	„	2,590	62	598	6
Siam	„	...	...	1,358	31
Turkey in Asia	„	790	66		
Abyssinia	„	...	...	70,416	858
Egypt	„	3,779	225		
Réunion	„	...	...	34,295	1,505
Zanzibar	„	...	...	164	2
United States	„	3,220	130		
	„	912,537	26,816	11,809,136	120,796
MANUFACTURED:					
United Kingdom	Lbs.	764,966	93,339	151,120	15,054
Gibraltar	„	...	...	22,047	1,526
Malta	„	5,952	2,729	16,716	1,217
Aden	„	988	382	64,365	2,678
Ceylon	„	6,317	2,253	94,180	5,575
China, Hong Kong	„	16,943	3,362	21,850	561
Straits Settlements	„	244,319	13,962	287,838	15,993
Cape Colony	„	...	...	2,544	387
Mauritius	„	...	...	22,665	1,939
Natal	„	...	...	61,890	1,037
Australia	„	271	83	6,774	938
Austria	„	2,315	671	4,287	396
Belgium	„	5,068	1,946	1,945	301
France	„	608	269	367	40
Germany	„	3,862	1,738	2,776	264
Holland	„	1,770	587		
Italy	„	45	9		
Turkey in Europe	„	...	...	120	70
Arabia	„	12	2	8,802	229
China, Treaty Ports	„	112	4	165	24
Japan	„	...	...	3,144	57
Java	„	...	...	3,045	159
Maldive Islands	„	...	...	41,580	486
Mekran and Sonmiani	„	...	...	908	52
Persia	„	600	65	9,875	996
Philippine Islands	„	6,888	1,548	5	1
Saigon	„	670	257		
Siam	„	...	...	3,713	325
Turkey in Asia	„	8	2	1,276	133
Abyssinia	„	...	...	30	2
Egypt	„	29,644	18,208	1,542	123
Madagascar	„	...	...	187	24

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont.*					
TOBACCO—*cont.*					
MANUFACTURED—*cont.*					
Réunion	Lbs.	...	...	333	28
Zanzibar	„	2	0	4,751	410
South America	„	...	...	2,376	43
United States	„	264,144	20,576	200	20
Other Countries	„	...	...	15	3
	„	1,355,504	161,992	847,431	51,091
OTHER DRUGS, &c.		—	435,292	—	155,668
DYEING AND TANNING MATERIALS:					
ANILINE AND ALIZARINE DYES:					
United Kingdom	Oz.	10,456,544	67,274	11,184	97
Aden	„	768	10	9,280	75
Ceylon	„	320	6	148,736	528
Straits Settlements	„	4,208	18	16,000	75
Mauritius	„	...	...	16,400	183
Austria	„	9,066,048	53,386	2,656	11
Belgium	„	60,593,320	282,731	19,072	141
France	„	459,808	5,679	1,840	55
Germany	„	4,525,920	28,947	320	5
Holland	„	6,344,896	25,618		
Italy	„	3,328,324	38,245	8,000	105
Arabia	„	...	...	93,672	1,096
China, Treaty Ports	„	1,600	7		
Persia	„	...	...	97,776	814
Turkey in Asia	„	80	0	675,648	6,207
Mozambique	„	...	...	3,392	23
Zanzibar	„	...	...	13,152	102
South America	„	...	...	576	7
	„	94,781,836	501,921	1,117,704	9,524
CUTCH AND GAMBIER:					
United Kingdom	Cwt.	...	...	97,914	168,828
Aden	„	...	...	4	28
Ceylon	„	26	40	643	1,547
China, Hong Kong	„	...	...	174	333
Straits Settlements	„	17,573	35,926	19,192	32,513
Mauritius	„	...	...	27	60
Natal	„	...	...	11	21
Australia	„	...	...	18	45
France	„	...	...	4,940	7,608
Germany	„	...	...	2,714	3,715
Holland	„	...	...	4,448	8,051
Italy	„	...	...	711	1,205
Spain	„	...	...	350	630
Turkey in Europe	„	...	...	2	4
Arabia	„	...	...	75	147
Persia	„	...	...	1	3
Siam	„	...	...	2	5
Sumatra	„	10	20		
Turkey in Asia	„	...	...	47	108
Egypt	„	...	...	5,832	10,221
Mozambique	„	...	...	1	7
Zanzibar	„	...	...	164	307
South America	„	...	...	7	14
United States	„	...	...	92,378	147,727
	„	17,603	35,986	229,655	383,127
INDIGO:					
United Kingdom	Cwt.	50	1,044	58,086	1,657,884
Malta	„	...	...	145	3,293
Aden	„	...	...	6	127
Ceylon	„	...	...	594	14,192
China, Hong Kong	„	...	...	20	458
Straits Settlements	„	681	694	241	4,864
Austria	„	...	...	8,638	361,114
Belgium	„	...	...	331	14,789
France	„	...	...	11,763	490,729
Germany	„	1	9	4,381	187,495
Greece	„	...	...	182	8,080
Holland	„	...	...	151	6,952
Italy	„	...	...	1,768	74,268
Russia	„	...	...	1,232	56,732
Turkey in Europe	„	...	...	224	7,186

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
IV. CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS—*cont.*					
INDIGO—*cont.*					
Arabia	Cwt.	...	...	226	3,022
Japan	„	...	...	688	15,851
Persia	„	69	1,077	4,212	81,861
Turkey in Asia	„	...	...	4,296	142,403
Egypt	„	...	...	10,603	274,172
United States	„	...	...	18,917	735,636
Other Countries	„	...	...	2	94
	„	801	2,824	126,706	4,141,202
LAC-DYE:					
United Kingdom	Cwt.	...	...	249	1,009
MYRABOLAMS:					
United Kingdom	Cwt.	...	...	471,657	238,559
Gibraltar	„	...	...	1	1
Aden	„	...	...	7	3
Ceylon	„	7,813	3,117	361	142
China, Hong Kong	„	...	...	412	190
Straits Settlements	„	...	...	315	158
Mauritius	„	...	...	9	4
Natal	„	...	...	403	189
Australia	„	...	...	10,630	5,436
Austria	„	...	...	54,658	27,040
Belgium	„	...	...	15,178	7,779
France	„	...	...	15,270	6,500
Germany	„	...	...	76,049	39,240
Italy	„	...	...	7,321	3,600
Russia	„	...	...	14,876	7,672
Turkey in Europe	„	...	...	8	4
Arabia	„	...	...	22	11
Mekran and Sonmiani	„	...	...	3	1
Persia	„	...	...	109	50
Turkey in Asia	„	...	...	120	56
Egypt	„	...	...	93	47
Mozambique	„	...	...	3	1
United States	„	...	...	161	85
	„	7,813	3,117	667,666	336,768
TURMERIC:					
United Kingdom	Cwt.	...	...	13,788	16,740
Gibraltar	„	...	...	74	106
Aden	„	...	...	4,680	5,782
Ceylon	„	—	1	4,670	4,977
China, Hong Kong	„	1,842	1,795	26	32
Straits Settlements	„	259	293	2,511	2,697
Cape Colony	„	...	...	30	39
Mauritius	„	...	...	1,520	1,662
Natal	„	...	...	188	204
Australia	„	...	...	226	[299
Austria	„	...	...	698	783
France	„	...	...	3,468	3,510
Germany	„	...	...	287	237
Italy	„	...	...	202	204
Turkey in Europe	„	...	...	89	106
Arabia	„	...	...	3,510	4,405
Maldive Islands	„	...	...	4	6
Mekran and Sonmiani	„	...	...	252	350
Persia	„	1	1	6,940	9,160
Turkey in Asia	„	...	...	3,488	4,125
Abyssinia	„	...	...	2	2
Egypt	„	...	...	2,643	3,284
Mozambique	„	...	...	188	245
Réunion	„	...	...	50	58
Zanzibar	„	...	...	1,209	1,546
South America	„	...	...	105	177
United States	„	...	...	9,016	10,468
West Indies	„	...	...	42	66
Other Countries	„	...	...	1	2
	„	2,102	2,090	59,907	71,272
OTHER SORTS	„	20,946	98,695	—	21,774
TOTAL CHEMICALS, DRUGS, MEDICINES AND NARCOTICS, AND DYEING AND TANNING MATERIALS		—	1,615,097	—	14,651,832

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
V. OILS :					
MINERAL :					
United Kingdom	Gals.	2,582,071	163,959	1,142	43
Aden	„	13	0	140	18
Ceylon	„	16,233	808	149,128	7,278
China, Hong Kong	„	2,996	176	9,960	1,410
Straits Settlements	„	51,607	3,090	76,600	4,445
Mauritius	„	...	...	13,720	2,185
Canada	„	19,259	1,570		
Belgium	„	46,016	3,509		
France	„	2	2		
Germany	„	15,427	517		
Italy	„	945	172		
Arabia	„	50	4	50,927	2,223
Java	„	...	...	160	30
Maldive Islands	„	...	...	5,296	228
Mekran and Sonmiani	„	...	...	4,614	206
Persia	„	...	...	95,061	4,141
Russia in Asia	„	38,086,703	1,488,416		
Siam	„	16	1	4,424	215
Turkey in Asia	„	...	...	43,970	1,920
Madagascar	„	...	...	1,667	60
Mozambique	„	...	...	13,835	604
Zanzibar	„	...	...	75	22
United States	„	26,264,630	1,027,940		
Other countries	„	...	...	1,600	68
	„	67,085,968	2,690,264	472,319	25,096
OTHER OILS :					
United Kingdom	Gals.	253,741	44,681	1,629,416	182,659
	Cwt.	...		14,121	
Aden	Gals.	...	...	18,134	2,547
Ceylon	„	1,039,636	135,102	123,788	30,107
	Cwt.	...		56,414	
China, Kong Kong	Gals.	43,017	5,517	122,930	16,121
Straits Settlements	„	57,266	11,792	298,189	39,212
	Cwt.	...		4,263	
Cape Colony	Gals.	...	...	77,570	8,884
Mauritius	„	233,144	30,103	169,722	19,726
Natal	„	9	1	74,236	9,279
Australia	„	36	70	716,459	75,390
Austria	„	355	83	20,956	3,991
Belgium	„	1,143	269	137,738	18,951
France	„	66	82	87,237	17,633
Germany	„	416	310	254,372	37,869
Italy	„	79	212	255	24
Turkey in Europe	„	...	...	891	4,195
Arabia	„	21	9	65,091	11,059
Java	Cwt.	...	...	540	126
Maldive Islands	Gals.	...	...	74	24
Mekran and Sonmiani	„	294	49	3,900	534
Persia	„	...	...	26 521	3,707
Siam	„	...	...	1,277	186
Turkey in Asia	„	...	...	16,821	1,189
Abyssinia	„	12	30	15,953	2,460
Egypt	„	112	233	27,558	11,020
Madagascar	„	...	...	104	21
Mozambique	„	36	5	14,888	2,118
Réunion	„	...	...	1,405	219
Zanzibar	„	5	9	12,506	2,298
South America	„	...	...	1,870	250
United States	„	2,408	351	850,465	92,206
West Indies	„	...	...	3,521	449
Other countries	„	...	...	797	115
	Gals.	1,631,796	228,898	4,774,644	594,569
	Cwt.	..		75,338	
TOTAL OILS	Gals.	68,717,764	2,919,162	5,246,963	619,665
	Cwt.	...		75,338	
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES :					
COAL (including coke and patent fuel) :					
United Kingdom	Tons	627,032	1,107,796	10	11
Aden	„	143	210	3	6
Ceylon	„	56	101	13,539	13,941
Straits Settlements	„	50	50	3	16

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
COAL (including coke and patent fuel)—*cont.*					
Cape Colony	Tons.	180	315		
Mauritius	,,	28	41	1,518	1,236
Australia	,,	16,942	25,521	710	695
Belgium	,,	130	296		
France	,,	—	8		
Germany	,,	300	830		
Italy	,,	27	38		
Arabia	,,	6	10		
Japan	,,	1,900	3,800		
Russia in Asia	,,	100	160		
Sumatra	,,	17	28		
Mozambique	,,	10	11	5	10
Zanzibar	,,	57	80		
South America	,,	1,087	1,925		
United States	,,	100	180		
Other Countries	,,	20	50		
	,,	648,185	1,141,450	15,788	15,915
COIR :					
United Kingdom	Cwt.	...	...	12,722	9,295
Aden	,,	...	...	29	16
Ceylon	,,	236	170	482	345
Straits Settlements	,,	...	...	20	21
Cape Colony	,,	...	...	4,629	3,150
Mauritius	,,	16	16	1,015	631
Natal	,,	...	...	553	375
Australia	,,	...	...	254	240
Austria	,,	...	...	4	4
Belgium	,,	...	...	808	610
Germany	,,	...	...	1,167	945
Arabia	,,	...	...	526	295
Turkey in Asia	,,	...	...	4,342	2,339
Mozambique	,,	...	...	9	4
Zanzibar	,,	...	...	6	3
United States	,,	...	...	12,021	9,879
	,,	252	186	38,587	28,152
COTTON, RAW :					
United Kingdom	Cwt.	19,869	37,600	528,487	1,305,394
Aden	,,	962	2,685	1	3
Ceylon	,,	375	403	7,765	20,773
China, Hong Kong	,,	...	...	45,546	124,791
Straits Settlements	,,	...	...	17,832	45,302
Mauritius	,,	...	...	95	111
Natal	,,	...	...	133	334
Australia	,,	...	...	1,868	4,679
Austria	,,	...	...	593,585	1,623,208
Belgium	,,	...	...	683,526	1,817,312
France	,,	...	...	536,959	1,462,703
Germany	,,	...	...	915,185	2,419,053
Greece	,,	...	...	160	373
Italy	,,	...	...	709,412	1,886,333
Russia	,,	...	...	204,172	527,985
Spain	,,	...	...	88,567	222,593
Sweden	,,	...	...	5,950	15,735
Arabia	,,	6,009	9,485	478	529
China, Treaty Ports	,,	1,845	8,790	815	2,089
Japan	,,	...	...	443,988	1,256,755
Mekran and Sonmiani	,,	4,107	3,389		
Persia	,,	44,819	110,187	56	77
Turkey in Asia	,,	803	2,283	7	15
Abyssinia	,,	63	126	75	224
Egypt	,,	28,548	86,760	2,643	6,620
Mozambique	,,	...	...	4	10
Zanzibar	,,	72	112	2,010	878
United States	,,	...	...	2	4
	,,	107,472	261,820	4,789,321	12,743,883

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
FLAX, RAW:					
Ceylon	Lbs.	140	3	5,040	61
Mozambique	„	...	...	224	8
	„	140	3	5,264	69
GUMS AND RESINS:					
United Kingdom	Cwt.	31,366	18,263	47,793	110,482
Gibraltar	„	...	...	21	74
Aden	„	6,636	9,172	313	1,098
Ceylon	„	7	20	350	490
China, Hong Kong	„	2	3	5,536	7,090
Straits Settlements	„	11,641	31,785	255	875
Mauritius	„	...	...	198	310
Natal	„	...	...	62	289
Australia	„	12	28	237	864
Austria	„	13	24	1,103	1,593
Belgium	„	...	...	13,569	22,176
France	„	...	...	3,084	7,260
Germany	„	175	107	1,050	2,323
Greece	„	...	...	153	148
Italy	„	...	...	1,453	2,071
Turkey in Europe	„	...	...	38	131
Arabia	„	16,137	20,674	940	1,727
China, Treaty Ports	„	...	...	362	247
Japan	„	...	...	890	1,406
Mekran and Sonmiani	„	17	28	32	43
Maldive Islands	„	...	...	1	0
Persia	„	16,111	21,410	642	642
Turkey in Asia	„	180	349	817	1,036
Abyssinia	„	4	9		
Egypt	„	42	82	394	413
Madagascar	„	12	79		
Mozambique	„	1	2	569	342
Zanzibar	„	481	2,137	83	194
Other Countries	„	3,568	5,201		
	„	86,405	104,373	79,945	163,324
HEMP, RAW:					
United Kingdom	Cwt.	375	1,080	48,728	46,666
Ceylon	„	...	...	3	5
China, Hong Kong	„	7,916	18,918		
Australia	„	...	...	156	265
Austria	„	191	661	14	12
Belgium	„	...	...	32,284	28,281
France	„	...	...	10	8
Germany	„	...	...	70	57
Italy	„	20	75		
Arabia	„	...	...	1,812	1,874
Persia	„	...	...	1,491	1,593
Philippine Islands	„	882	1,902		
Turkey in Asia	„	...	...	117	141
Mozambique	„	...	...	4	16
United States	„	...	...	228	192
Other Countries	„	...	...	61	61
	„	9,334	22,636	84,978	79,171
HIDES AND SKINS, RAW:					
United Kingdom	Cwt.	15	66	106,645	443,395
Aden	„	404	1,110	97	226
Ceylon	„	2,159	8,777	2	6
China, Hong Kong	„	...	...	177	924
Straits Settlements	„	1,764	4,316	6,232	14,124
Mauritius	„	520	1,694	173	1,908
Austria	„	...	...	33,617	131,715
Belgium	„	...	...	1,886	4,625
France	„	...	...	40,356	162,065
Germany	„	2	18	188,355	722,235
Holland	„	...	...	947	4,108
Italy	„	...	...	63,597	247,217
Spain	„	...	...	783	3,980

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
HIDES AND SKINS—*cont.*					
Turkey in Europe	Cwt.	...	...	2,003	4,961
Arabia	„	2,153	8,151	130	315
China, Treaty Ports	„	...	...	28	68
Japan	„	...	...	61	560
Mekran and Sonmiani	„	1,343	2,991		
Persia	„	7,644	28,595	1,028	2,661
Turkey in Asia	„	2,030	6,266	1,429	3,699
Abyssinia	„	1	8		
Egypt	„	...	...	10,568	33,556
Madagascar	„	10	25		
Mozambique	„	4	25		
Zanzibar	„	22	39	6	22
United States	„	...	...	115,547	853,131
Other Countries	„	2	4		
	„	18,073	62,085	573,667	2,635,501
IVORY:					
United Kingdom	Lbs.	97,514	69,638	134,390	89,122
Aden	„	26,189	15,334	336	250
Ceylon	„	...	...	204	139
China, Hong Kong	„	1,143	355	41,298	15,552
Straits Settlements	„	676	424	12,009	5,231
Belgium	„	864	720		
Germany	„	20,667	12,661	6,261	6,068
Arabia	„	112	10		
Japan	„	...	...	8,988	1,751
Abyssinia	„	3,522	2,199		
Egypt	„	5,241	3,577		
Mozambique	„	84,767	48,523		
Zanzibar	„	153,893	81,416		
	„	394,588	234,857	203,486	118,113
JEWELLERY: PRECIOUS STONES AND PEARLS, UNSET:					
United Kingdom		—	2,125	—	2,155
Aden		—	12,550	—	700
China, Hong Kong		—	1,736	—	4,284
Straits Settlements		—	422	—	165
Austria		—	3,414	—	2,507
Belgium		—	112	—	843
France		—	160	—	3,293
Germany		—	22		
Italy		—	1,279		
Arabia		—	115,619	—	3,726
Persia		—	67,557	—	2,720
Turkey in Asia		—	100	—	693
Egypt		...	...	—	815
Mozambique		—	1,455		
Zanzibar		—	789	—	264
		—	207,340	—	22,165
JUTE, RAW:					
United Kingdom	Cwt.	...	...	6,133,416	4,938,001
Ceylon	„	5	5	298	294
China, Hong Kong	„	4	3	35,771	28,378
Straits Settlements	„	8	8	436	422
Australia	„	...	...	192	57
Austria	„	...	...	254,857	213,147
Belgium	„	...	...	3,572	3,751
France	„	...	...	225,912	267,321
Germany	„	...	...	1,360,892	1,144,327
Italy	„	...	...	288,254	239,845
Spain	„	...	...	185,385	154,963
Arabia	„	...	...	30	30
Japan	„	...	...	19,972	14,962
United States	„	...	...	1,928,525	938,725
	„	17	16	10,537,512	7,944,223

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
LAC, STICK:					
United Kingdom	Cwt.	...	...	382	1,260
Straits Settlements	,,	419	1,057	876	3,207
United States	,,	...	...	73	320
	,,	419	1,057	1,331	4,787
SALTPETRE:					
United Kingdom	Cwt.	5	19	153,108	151,910
Ceylon	,,	...	...	950	947
China, Hong Kong	,,	...	...	83,864	85,083
Straits Settlements	,,	...	...	12,881	11,950
Cape Colony	,,	...	...	406	425
Mauritius	,,	...	...	31,345	30,868
Natal	,,	...	...	410	419
Australia	,,	...	...	530	573
France	,,	...	...	6,876	6,488
Germany	,,	—	1		
Italy	,,	...	...	225	276
Arabia	,,	...	...	393	454
Japan	,,	...	...	1,891	1,958
Java	,,	...	...	1,542	920
Mekran and Sonmiani	,,	...	...	36	43
Persia	,,	...	...	130	153
Turkey-in-Asia	,,	...	...	9	14
Réunion	,,	...	...	5,580	5,820
Zanzibar	,,	...	...	82	97
United States	,,	...	...	142,830	139,690
West Indies	,,	...	...	843	852
	,,	5	20	443,931	438,940
SEEDS:					
LINSEED:					
United Kingdom	Cwt.	...	...	4,144,389	2,881,639
Aden	,,	...	...	24	16
Ceylon	,,	43	27	1	1
China, Hong Kong	,,	33	13	12	9
Straits Settlements	,,	...	...	3	2
Mauritius	,,	...	...	124	77
Natal	,,	...	...	110	85
Australia	,,	...	...	6,819	5,008
Austria	,,	...	...	9,000	6,525
Belgium	,,	...	...	508,266	382,474
France	,,	...	...	1,640,615	1,196,049
Germany	,,	...	...	391,464	277,573
Holland	,,	...	...	646,102	440,673
Italy	,,	...	...	233,909	174,033
Arabia	,,	...	...	173	125
China, Treaty Ports	,,	...	...	6	4
Persia	,,	1,423	964		
Turkey in Asia	,,	1,642	1,213		
Egypt	,,	...	...	72,801	49,591
Mozambique	,,	...	...	11	9
Réunion	,,	...	...	7	5
Zanzibar	,,	...	...	4	3
South America	,,	...	...	38,919	26,536
United States	,,	...	...	17,899	13,489
West Indies	,,	...	...	106,896	72,371
	,,	3,141	2,217	7,817,554	5,526,297
RAPESEED:					
United Kingdom	Cwt.	2	3	246,180	144,291
Ceylon	,,	...	...	8	7
Straits Settlements	,,	15	10		
Mauritius	,,	...	...	14	27
Natal	,,	...	...	1	0
Australia	,,	...	...	181	113
Belgium	,,	...	...	942,331	634,048
France	,,	...	...	740,086	491,800
Germany	,,	...	...	721,763	464,980
Holland	,,	...	...	22,178	15,046
Italy	,,	...	...	129,315	84,719

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES.—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
SEEDS—*cont.*					
RAPESEED—*cont.*					
Mekran and Sonmiani	Cwt.	17,195	10,977		
Zanzibar	„	...	...	13	11
	„	17,212	10,990	2,802,070	1,835,042
TIL OR JINJILI:					
United Kingdom	Cwt.	...	...	9,999	7,671
Aden	„	...	...	3,602	2,898
Ceylon	„	652	484	11,635	8,227
Straits Settlements	„	80,351	65,709	372	246
Mauritius	„	...	...	122	92
Natal	„	...	...	10	8
Austria	„	...	...	20,995	17,929
Belgium	„	...	...	288,988	253,359
France	„	...	...	1,643,477	1,329,006
Germany	„	...	...	144,626	129,990
Italy	„	...	...	396,752	314,641
Russia	„	...	...	7,031	5,878
Arabia	„	33	27	5,002	4,079
Mekran and Sonmiani	„	9	5	6	6
Persia	„	3,139	2,333	233	210
Siam	„	12	9		
Turkey in Asia	„	16,007	12,156		
Egypt	„	...	...	21,918	18,077
Mozambique	„	414	334		
Zanzibar	„	4,150	3,060		
	„	104,767	84,117	2,554,768	2,092,317
OTHER SEEDS	„	21,865	27,703	3,336,597	2,179,718
TOTAL SEEDS:					
United Kingdom	Cwt.	575	7,087	4,650,555	3,178,546
Gibraltar	„	...	...	2	4
Aden	„	...	...	10,967	6,676
Ceylon	„	2,194	1,550	53,948	41,525
China, Hong Kong	„	33	21	2,136	1,788
Straits Settlements	„	80,828	66,446	55,390	35,822
Mauritius	„	...	...	4,541	3,922
Natal	„	4	3	818	330
Australia	„	—	16	7,191	5,331
Austria	„	29	457	33,317	26,758
Belgium	„	...	...	2,330,376	1,662,032
France	„	2	69	5,975,965	4,320,769
Germany	„	1,677	1,475	1,376,397	945,863
Holland	„	2	5	668,280	455,720
Italy	„	22	115	914,791	661,913
Russia	„	...	...	147,304	84,939
Sweden	„	1	12		
Turkey in Europe	„	...	...	4	9
Arabia	„	126	107	11,678	9,901
China, Treaty Ports	„	...	...	13	6
Japan	„	9	17	95	82
Java	„	...	...	255	2,511
Maldive Islands	„	...	...	48	46
Mekran and Sonmiani	„	17,211	10,989	204	160
Persia	„	20,145	18,208	1,960	1,434
Siam	„	12	9	47	43
Sumatra	„	...	...	3	3
Turkey in Asia	„	17,713	13,476	234	225
Abyssinia	„	...	...	373	234
Egypt	„	121	24	94,950	67,979
Madagascar	„	...	...	4	7
Mozambique	„	1,869	1,535	381	523

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
SEEDS—*cont.*					
TOTAL SEEDS—*cont.*					
Réunion	Cwt.	...	...	154	147
Zanzibar	„	4,399	3,206	2,108	2,931
South America	„	...	...	39,062	26,676
United States	„	13	200	20,484	15,543
West Indies	„	...	...	106,948	72,468
Other Countries	„	...	...	6	8
	„	146,985	125,027	16,510,989	11,633,374
SHELLS AND COWRIES:					
United Kingdom		...	...	—	42,443
Aden		—	10,447	—	20
Ceylon		—	18,330	—	1,226
China, Hong Kong		—	12		
Straits Settlements		—	13	—	8,511
Mauritius		—	10		
Austria		...	...	—	1
France		...	...	—	71
Germany		...	...	—	14
Turkey in Europe		...	...	—	30
Arabia		—	12,611	—	57
Maldive Islands		—	774		
Mekran and Sonmiani		...	...	—	14
Persia		—	6,001		
Siam		...	...	—	7
Turkey in Asia		...	186	—	288
Abyssinia		—	1,554		
Egypt		—	4,869	—	200
Madagascar		—	1,093		
Mozambique		—	1,356		
Zanzibar		—	8,289		
Other Countries		—	2,735		
		—	68,280	—	52,882
SILK, RAW (including chasam and cocoons):					
United Kingdom	Lbs.	16	3	494,767	185,118
Aden	„	371	148	6,482	1,872
Ceylon	„	20	9		
China, Hong Kong	„	1,328,987	520,826	22	14
Straits Settlements	„	456,416	244,120		
Australia	„	...	...	15	1
France	„	5,456	4,057	1,194,652	305,118
Germany	„	61	50		
Italy	„	443	396	133,482	115,269
Arabia	„	1,204	254	23,771	11,785
China, Treaty Ports	„	378,823	204,199		
Japan	„	53,600	14,172		
Mekran and Sonmiani	„	...	...	10,306	2,915
Persia	„	37,750	19,183	7,706	3,956
Siam	„	26,209	5,726		
Turkey in Asia	„	...	...	26,168	13,013
Abyssinia	„	...	...	185	158
Egypt	„	3,364	2,864	21,551	8,002
Zanzibar	„	126	63	1,308	953
United States	„	...	...	8,959	6,625
	„	2,292,846	1,016,080	1,929,374	654,799
WOOD:					
United Kingdom		—	12,082	—	465,893
Gibraltar		...	...	—	10,063
Aden		...	...	—	3,096
Ceylon		—	13,151	—	40,386
China, Hong Kong		—	115	—	17,629
Straits Settlements		—	21,032	—	1,955
Cape Colony		...	15	—	5,628
Mauritius		—	...	—	6,253
Natal		...	90	—	541
Australia		—	34	—	130
Austria		—	153	—	442

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VI. RAW MATERIALS AND UNMANUFACTURED ARTICLES—*cont.*					
WOOD—*cont.*					
Belgium		—	24	—	100
France		...	...	—	28,219
Germany		—	664	—	7,479
Italy		—	15	—	100
Norway		—	22		
Spain		...	...	—	5,000
Sweden		—	2,734		
Arabia		—	143	—	5,601
China, Treaty Ports		...	...	—	7,702
Japan		—	15	—	120
Java		—	44		
Maldive Islands		...	...	—	46
Mekran and Sonmiani		—	235	—	875
Persia		...	...	—	1,689
Siam		—	17,483		
Sumatra		—	17		
Turkey in Asia		...	...	—	9,766
Abyssinia		...	...	—	156
Egypt		—	13	—	30,683
Madagascar		—	1,447		
Mozambique		—	365	—	382
Zanzibar		—	3,233	—	5,597
South America		—	17		
United States		—	8,982	—	6,824
West Indies		...	...	—	4
Other Countries		...	...	—	67
		—	82,125	—	662,426
WOOL, RAW :					
United Kingdom	Lbs.	80,307	5,706	36,059,204	1,670,414
Aden	,,	5,600	175		
China, Hong Kong	,,	37,030	2,777		
Straits Settlements	,,	1,680	51		
Australia	,,	2,105	168		
Austria	,,	...	...	16,800	750
Belgium	,,	...	...	590,466	23,060
France	,,	...	...	191,856	8,265
Germany	,,	...	...	53,899	1,656
Arabia	,,	118,594	3,449		
Japan	,,	...	...	113,896	6,770
Mekran and Sonmiani	,,	1,177,989	20,719		
Persia	,,	3,175,480	93,075		
Turkey in Asia	,,	3,136	84		
United States	,,	...	...	90,578	3,381
	,,	4,601,921	126,204	37,116,699	1,714,296
OTHER SORTS		—	150,719	—	1,283,639
TOTAL RAW MATERIALS AND UNMANUFACTURED ARTICLES		—	3,604,278	—	40,195,659
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED :					
COTTON :					
TWIST AND YARN :					
United Kingdom	Lbs.	37,337,449	2,606,482	23,387	1,507
Aden	,,	7,995	483	1,441,627	60,501
Ceylon	,,	44,372	2,692	109,542	5,840
China, Hong Kong	,,	954	56	108,925,802	3,839,115
Straits Settlements	,,	59,768	4,840	1,847,134	78,535
Austria	,,	505,500	44,930		
Belgium	,,	221,800	16,416		
France	,,	4,315	301	470	12
Germany	,,	19,600	1,673	5,300	265
Holland	,,	47,640	3,994	6,800	425
Italy	,,	16,500	1,423		
Arabia	,,	3,689	157	436,631	22,799
China, Treaty Ports	,,	31	1	67,960,336	2,452,448
Japan	,,	...	...	7,351,801	277,774
Java	,,	...	...	331,185	15,180
Mekran and Sonmiani	,,	1,932	56	10,274	698
Persia	,,	2,800	220	1,122,167	69,279

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
COTTON—*cont.*					
TWIST AND YARN—*cont.*					
Siam	Lbs.	...	...	10,740	399
Sumatra	,,	...	...	4,400	166
Turkey in Asia	,,	1,600	91	766,050	29,429
Abyssinia	,,	20	10	34,900	3,475
Egypt	,,	...	...	20,000	750
Zanzibar	,,	400	25	75,435	4,136
Other Countries	,,	...	...	37,800	1,571
	,,	38,276,545	2,683,850	190,521,781	6,864,304
PIECE GOODS:					
GREY (unbleached):					
United Kingdom	Yds.	1,090,163,919	12,126,264	177,778	2,499
Malta	,,	...	...	38	1
Aden	,,	148,006	2,992	10,966,257	150,094
Ceylon	,,	427,785	7,625	1,168,248	20,450
China, Hong Kong	,,	48	1	843,071	11,244
Straits Settlements	,,	15,584	247	2,194,337	27,357
Cape Colony	,,	...	...	160	3
Mauritius	,,	...	...	3,254,820	48,009
Natal	,,	...	...	209,835	3,620
Australia	,,	...	...	14,028	293
Austria	,,	41,599	3,032	8	1
Belgium	,,	1,520	47		
Holland	,,	8,000	180		
Turkey in Europe	,,	...	...	720	8
Arabia	,,	23,043	305	4,336,852	55,899
China, Treaty Ports	,,	72	1	12,664,334	169,464
Japan	,,	...	...	64,820	909
Java	,,	40	1	72,600	867
Maldive Islands	,,	...	...	8,628	115
Mekran and Sonmiani	,,	918	10	1,276,398	14,984
Persia	,,	4,676	60	10,213,542	160,252
Siam	,,	...	...	490,180	6,607
Turkey in Asia	,,	...	...	4,309,721	59,094
Abyssinia	,,	...	...	3,135,669	32,562
Egypt	,,	...	...	1,238,468	15,894
Madagascar	,,	8,400	52	12,000	180
Mozambique	,,	...	...	11,062,702	105,664
Zanzibar	,,	81,580	957	15,311,802	147,700
United States	,,	1,659,050	34,956		
Other Countries	,,	...	...	17,315	238
	,,	1,092,584,240	12,176,730	83,044,331	1,034,008
WHITE (bleached):					
United Kingdom	Yds.	374,115,211	4,797,785	89,302	1,874
Gibraltar	,,	...	...	3,940	79
Malta	,,	...	...	4,834	136
Aden	,,	4,434	72	1,417,343	19,889
Ceylon	,,	52,872	2,145	831,196	15,783
China, Hong Kong	,,	750	20	30,994	555
Straits Settlements	,,	897,079	20,934	760,275	14,237
Mauritius	,,	...	...	864,363	14,331
Natal	,,	...	...	86,596	1,950
Australia	,,	...	...	8,996	178
Austria	,,	874,527	31,169		
Belgium	,,	43,883	988		
France	,,	83,429	2,983	30	3
Germany	,,	9,722	389		
Holland	,,	134,364	3,402		
Italy	,,	117,725	4,100		
Turkey in Europe	,,	...	...	3,885	356
Arabia	,,	19,545	271	1,823,616	28,748
China, Treaty Ports	,,	60	2		
Java	,,	...	...	7,246	149
Maldive Islands	,,	...	...	1,421	13
Mekran and Sonmiani	,,	1,600	26	269,821	3,359
Persia	,,	1,650	23	4,580,914	76,236
Siam	,,	...	...	10,150	227
Sumatra	,,	...	...	1,000	25
Turkey in Asia	,,	1,950	52	218,805	3,811

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
COTTON—*cont.*					
PIECE GOODS—*cont.*					
WHITE (bleached)—*cont.*					
Abyssinia	Yds.	...	...	331,188	4,569
Egypt	„	...	...	246,624	4,000
Mozambique	„	...	...	259,403	4,649
Zanzibar	„	...	...	1,044,548	16,910
Other Countries	„	...	...	11,030	180
	„	376,358,801	4,864,361	12,907,520	212,247
COLOURED, PRINTED, OR DYED:					
United Kingdom	Yds.	328,779,302	4,924,075	840,705	20,382
Gibraltar	„	240	4	672	15
Malta	„	...	...	2,484	50
Aden	„	75,519	759	5,245,435	100,885
Ceylon	„	166,336	5,118	7,714,085	205,893
China, Hong Kong	„	9,824	401	134,699	2,511
Straits Settlements	„	1,240,561	44,662	11,883,507	328,932
Cape Colony	„	...	...	8	2
Mauritius	„	6,793	70	1,550,106	31,021
Natal	„	...	...	571,647	15,519
Australia	„	...	...	21,030	475
Austria	„	1,995,685	80,399	177	13
Belgium	„	681,846	15,716		
France	„	1,232,786	56,690	16,508	291
Germany	„	590,851	31,652		
Holland	„	2,943,267	90,507		
Italy	„	1,241,173	40,000	150	5
Arabia	„	78,434	3,988	7,122,030	134,186
China, Treaty Ports	„	...	...	79,785	3,311
Japan	„	10,608	276	280	20
Java	„	...	...	4,831	130
Maldive Islands	„	...	...	1,630	37
Mekran and Sonmiani	„	2,140	37	1,486,189	19,496
Persia	„	22,394	533	17,900,984	415,534
Philippines	„	...	...	134,208	1,895
Siam	„	1,300	30	348,060	5,536
Sumatra	„	...	...	3,726	89
Turkey in Asia	„	9,203	163	5,183,867	115,001
Abyssinia	„	225	2	290,175	6,387
Egypt	„	1,461	34	188,152	4,315
Mozambique	„	...	...	3,063,579	61,376
Réunion	„	...	...	3,600	100
Zanzibar	„	21,205	398	9,272,714	171,977
Other Countries	„	...	...	57,700	989
	„	339,111,153	5,295,514	73,122,794	1,646,373
OTHER COTTON MANUFACTURES		—	605,410	—	167,426
TOTAL COTTON MANUFACTURES (excluding twist and yarn):					
United Kingdom		—	22,364,694	—	86,773
Gibraltar		—	4	—	179
Malta		...	...	—	402
Aden		—	3,861	—	275,200
Ceylon		—	18,971	—	253,834
China, Hong Kong		—	558	—	16,669
Straits Settlements		—	67,116	—	380,673
Cape Colony		...	...	—	11
Mauritius		—	70	—	96,708
Natal		...	...	—	23,243
Australia		...	...	—	2,246
Austria		—	153,412	—	741
Belgium		—	21,694	—	208
France		—	62,644	—	1,040
Germany		—	53,444	—	2,188
Holland		—	103,183		
Italy		—	49,660	—	5,480
Spain		—	207		
Turkey in Europe		...	...	—	364
Arabia		—	4,604	—	227,069
China, Treaty Ports		—	3	—	172,775
Japan		—	276	—	929

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.	IMPORTS.		EXPORTS.	
	Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*				
COTTON—*cont.*				
TOTAL COTTON MANUFACTURES (excluding twist and yarn)—*cont.*				
Java	—	1	—	1,370
Maldive Islands	...	...	—	176
Mekran and Sonmiani	—	73	—	37,876
Persia	—	719	—	667,579
Phillipines	...	...	—	1,895
Siam	—	30	—	12,678
Sumatra	—	12	—	321
Turkey in Asia	—	294	—	192,158
Abyssinia	—	2	—	43,597
Egypt	—	34	—	25,328
Madagascar	—	52	—	180
Mozambique	...	...	—	182,893
Réunion	...	...	—	190
Zanzibar	—	1,355	—	345,123
United States	—	35,042	—	600
Other Countries	...	...	—	1,453
	—	22,942,015	—	3,060,054
FLAX, MANUFACTURES OF:				
United Kingdom	—	126,277	—	913
Aden	...	...	—	64
Ceylon	—	28	—	277
China, Hong Kong	—	1	—	96
Straits Settlements	—	110	—	399
Mauritius	—	1	—	66
Australia	...	...	—	90
Austria	—	1,298		
Belgium	—	911		
France	—	113		
Germany	—	393	—	10
Arabia	—	31	—	98
Maldive Islands	...	...	—	4
Mekran and Sonmiani	...	...	—	1
Persia	—	37	—	123
Siam	...	...	—	3,065
Turkey in Asia	...	...	—	192
Mozambique	...	...	—	213
Zanzibar	...	...	—	108
	—	129,200	—	5,719
HEMP, MANUFACTURES OF (excluding cordage):				
United Kingdom	—	5,689		
Germany	—	13		
Turkey-in-Asia	...	...	—	3
Zanzibar	...	...	—	29
	—	5,702	—	32
JUTE, MANUFACTURES OF:				
United Kingdom	—	29,871	—	555,871
Malta	...	...	—	1,007
Aden	—	175	—	2,946
Ceylon	—	35,428	—	19,512
China, Hong Kong	...	...	—	190,658
Straits Settlements	—	5,028	—	328,615
Cape Colony	...	...	—	126,836
Mauritius	—	1,248	—	5,243
Natal	...	...	—	43,620
Australia	—	2	—	756,311
Austria	—	165	—	4,668
Belgium	—	32	—	15,604
France	...	...	—	5,704
Germany	...	...	—	46,911
Greece	...	...	—	938
Italy	...	...	—	58
Turkey in Europe	...	...	—	32,947
Arabia	—	245	—	2,688
China, Treaty Ports	...	...	—	5,629
Japan	...	...	—	21,636
Java	...	...	—	3,608

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892-93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
JUTE, MANUFACTURES OF—*cont.*					
Maldive Islands		—	58	—	6
Mekran and Sonmiani		—	131	—	564
Persia		—	626	—	9,662
Saigon		...	...	—	5,257
Siam		—	45	—	19,618
Sumatra		...	...	—	570
Turkey in Asia		—	3	—	90,757
Abyssinia		—	92		
Egypt		...	...	—	186,705
Madagascar		...	...	—	66
Mozambique		—	52	—	12,385
Réunion		...	...	—	9,385
Zanzibar		—	29	—	6,630
South America		...	...	—	178,681
United States		...	...	—	540,992
West Indies		...	...	—	899
Other Countries		...	...	—	4,989
		—	73,230	—	3,238,176
SILK:					
PIECE GOODS:					
United Kingdom	Yds.	4,073,115	585,032	1,177,228	102,182
Gibraltar	„	80	12	46,912	3,348
Malta	„	...	...	57,606	4,994
Aden	„	462	119	49,386	4,501
Ceylon	„	161,689	14,564	136,668	13,919
China, Hong Kong	„	5,706,110	593,702	27,583	2,042
Straits Settlements	„	94,113	18,067	80,720	8,215
Mauritius	„	...	...	14,428	1,112
Natal	„	...	...	24,431	2,572
Australia	„	...	...	14,203	1,293
Austria	„	248,291	26,410		
Belgium	„	14,376	2,324		
France	„	1,199,356	144,091	313,766	32,417
Germany	„	106,021	14,833	13	4
Greece	„	...	...	1,623	144
Holland	„	2,126	200		
Italy	„	197,590	24,502	835	145
Turkey in Europe	„	...	...	2,700	345
Arabia	„	...	...	139,420	13,435
China, Treaty Ports	„	485,337	34,788		
Japan	„	208,088	24,266		
Java	„	...	...	5,897	389
Mekran and Sonmiani	„	...	...	773	81
Persia	„	39,057	5,599	104,673	12,068
Sumatra	„	...	...	350	30
Turkey in Asia	„	261	42	70,755	7,450
Abyssinia	„	57	24	4,233	472
Egypt	„	22,318	2,686	137,149	9,348
Mozambique	„	...	...	6,850	645
Zanzibar	„	...	...	50,894	5,820
United States	„	...	...	1,791	601
Other Countries	„	...	...	543	67
	„	12,558,447	1,491,261	2,471,520	227,639
GOODS OF SILK MIXED WITH OTHER MATERIALS:					
United Kingdom	Yds.	144,533	11,220		
Malta	„	...	...	16,912	1,985
Aden	„	1,875	123	9,880	714
Ceylon	„	12,231	686	3,175	438
China, Hong Kong	„	3,104	223	192	27
Straits Settlements	„	11,134	343	20,020	2,004
Natal	„	...	...	2,305	615
Austria	„	364,110	35,190		
Belgium	„	91,209	14,524		
France	„	1,993,168	191,611	16,764	1,040
Germany	„	134,152	10,862		
Italy	„	78,678	9,448		
Turkey in Europe	„	...	...	28,145	2,793
Arabia	„	7,185	500	164,569	17,847
Japan	„	274	11	8,518	300
Java	„	...	...	3,669	303

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
SILK—*cont.*					
GOODS OF SILK MIXED WITH OTHER MATERIALS—*cont.*					
Mekran and Sonmiani	Yds.	...	...	165	15
Persia	„	888	118	70,455	8,027
Siam	„	...	...	112	14
Turkey in Asia	„	204	13	25,822	3,587
Egypt	„	1,886	236	3,470	399
Mozambique	„	...	...	290	27
Zanzibar	„	...	...	10,475	949
United States	„	...	...	80	9
	„	2,844,631	275,108	385,018	41,093
OTHER SILK MANUFACTURES	Lbs.	46,201	35,202	262	209
TOTAL SILK MANUFACTURES		—	1,801,571	—	268,942
WOOL :					
PIECE GOODS :					
United Kingdom	Yds.	8,079,376	772,687	9,665	1,994
Gibraltar	„	...	...	775	102
Malta	„	...	...	781	105
Aden	„	4,412	61	24,931	2,939
Ceylon	„	7,115	721	341,727	21,896
China, Hong Kong	„	2,710	232	34,756	3,004
Straits Settlements	„	7,111	606	47,033	5,234
Mauritius	„	...	...	19,409	1,149
Natal	„	...	...	2,573	268
Australia	„	...	...	222	25
Austria	„	765,509	77,918		
Belgium	„	43,185	4,559		
France	„	299,600	17,798		
Germany	„	2,151,299	226,055	498	56
Holland	„	163,939	29,510		
Italy	„	3,174	164		
Arabia	„	106	21	11,931	1,597
Japan	„	...	...	3,842	597
Java	„	...	...	840	52
Persia	„	6,868	411	67,238	10,963
Turkey in Asia	„	...	...	2,833	525
Abyssinia	„	...	...	1,650	75
Egypt	„	1,488	93	988	130
Mozambique	„	...	...	26,757	2,697
Zanzibar	„	...	...	19,676	1,770
United States	„	...	...	565	121
	„	11,465,892	1,130,836	618,690	55,299
SHAWLS :					
United Kingdom	No.	463,885	115,378	1,677	4,048
Gibraltar	„	...	...	78	34
Malta	„	...	...	379	83
Aden	„	...	...	45	47
Ceylon	„	25	6	6	5
China, Hong Kong	„	...	...	75	15
Straits Settlements	„	1,225	277	1,122	261
Mauritius	„	...	...	12	4
Australia	„	...	...	156	51
Austria	„	60,193	28,510		
Belgium	„	422	50		
France	„	35	7	2	6
Germany	„	127,855	46,273	13	11
Arabia	„	...	...	9,130	1,376
Persia	„	10	47	18,164	14,518
Turkey in Asia	„	...	...	45	555
Egypt	„	...	...	649	1,302
Mozambique	„	...	...	48	5
Zanzibar	„	...	...	199	352
United States	„	...	...	124	204
	„	653,650	190,548	31,924	22,877
OTHER WOOLLEN MANUFACTURES	Lbs.	1,505,756	201,859	914,934	100,453
TOTAL WOOLLEN MANUFACTURES		—	1,523,243	—	178,629

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.	IMPORTS.		EXPORTS.	
	Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*				
APPAREL (including haberdashery, millinery, &c., but excluding hosiery):				
United Kingdom	—	847,154	—	93,269
Gibraltar	—	26	—	1,655
Malta	—	58	—	1,732
Aden	—	1,107	—	11,624
Ceylon	—	15,831	—	10,447
China, Hong Kong	—	23,423	—	2,684
Straits Settlements	—	63,957	—	35,987
Cape Colony	—	25	—	4,375
Mauritius	—	6	—	14,205
Natal	—	6	—	12,861
Australia	—	403	—	9,483
Austria	—	118,078	—	1,457
Belgium	—	9,612	—	43
France	—	210,474	—	2,795
Germany	—	49,912	—	1,902
Greece	—	3	—	57
Holland	—	2,371		
Italy	—	9,459	—	472
Russia	...	...	—	150
Spain	—	5		
Sweden	...	...	—	30
Turkey in Europe	—	5	—	149
Arabia	—	464	—	4,888
China, Treaty Ports	—	186	—	767
Cochin China	...	...	—	201
Japan	—	8,710	—	656
Java	...	...	—	5,145
Maldive Islands	...	...	—	65
Mekran and Sonmiani	...	...	—	196
Persia	—	995	—	6,258
Siam	—	2	—	285
Sumatra	...	...	—	116
Turkey in Asia	—	527	—	3,439
Abyssinia	—	34	—	667
Egypt	—	18,708	—	7,215
Madagascar	...	...	—	48
Mozambique	—	18	—	7,922
Réunion	...	...	—	751
Zanzibar	—	356	—	15,841
South America	...	...	—	813
United States	—	1,915	—	2,636
West Indies	...	...	—	150
Other Countries	...	...	—	598
	—	1,383,830	—	264,034
ARMS, AMMUNITION, &c. (excluding military accoutrements):				
United Kingdom	—	217,489	—	8,551
Malta	—	20	—	25
Aden	—	52	—	96
Ceylon	—	445	—	560
China, Hong Kong	—	21	—	6
Straits Settlements	—	102	—	270
Natal	...	...	—	15
Australia	...	...	—	150
Austria	—	192	—	129
Belgium	—	6,541		
France	—	140	—	16
Germany	—	381	—	672
Holland	—	11		
Italy	—	55	—	6
Arabia	—	10		
China, Treaty Ports	...	...	—	25
Japan	—	1	—	40
Persia	—	159	—	123
Russia in Asia	—	1		
Turkey in Asia	—	5	—	11
Egypt	—	4	—	13
Zanzibar	—	2		
United States	—	144	—	785
	—	225,775	—	11,493

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
BOOKS AND PRINTED MATTER (including maps and charts) :					
United Kingdom	Cwt.	14,955	219,269	870	18,262
Gibraltar	„	...	...	1	3
Malta	„	...	...	9	107
Aden	„	31	391	314	2,289
Ceylon	„	56	355	239	2,549
China, Hong Kong	„	30	378	9	162
Straits Settlements	„	137	901	2,279	13,291
Mauritius	„	3	35	24	268
Natal	„	...	...	29	231
Australia	„	20	449	13	180
Austria	„	78	1,147	44	709
Belgium	„	72	802		
France	„	34	580	3	114
Germany	„	87	1,120	14	124
Holland	„	6	238		
Italy	„	15	218	5	75
Turkey in Europe	„	...	...	4	80
Arabia	„	4	51	215	2,146
China, Treaty Ports	„	6	63	16	189
Japan	„	3	144	2	89
Java	„	1	15	1	3
Mekran and Sonmiani	„	...	...	1	16
Persia	„	23	314	312	3,582
Siam	„	...	...	1	17
Turkey in Asia	„	13	135	33	460
Abyssinia	„	...	...	4	20
Egypt	„	140	1,665	12	144
Mozambique	„	...	...	14	147
Zanzibar	„	1	3	48	394
South America	„	...	...	5	98
United States	„	178	2,291	38	631
West Indies	„	...	...	1	10
Other Countries	„	...	...	1	6
	„	15,893	230,564	4,561	46,396
CABINET WARE AND FURNITURE :					
United Kingdom		—	57,015	—	15,215
Gibraltar		—	15	—	2,079
Malta		—	7	—	1,514
Aden		—	118	—	1,154
Ceylon		—	1,617	—	1,754
China, Hong Kong		—	4,917	—	386
Straits Settlements		—	1,721	—	1,353
Cape Colony		...	...	—	18
Mauritius		—	5	—	419
Natal		...	...	—	565
Australia		—	81	—	460
Austria		—	5,388	—	183
Belgium		—	783		
France		—	408	—	1,321
Germany		—	16,532	—	99
Holland		—	150		
Italy		—	1,413	—	270
Turkey in Europe		—	10	—	35
Arabia		...	...	—	1,447
China, Treaty Ports		—	30		
Japan		—	4,982		
Java		...	...	—	50
Maldive Islands		...	...	—	11
Mekran and Sonmiani		—	3	—	10
Persia		—	43	—	1,301
Siam		—	6	—	12
Turkey in Asia		—	5	—	2,689
Abyssinia		...	...	—	61
Egypt		—	316	—	2,099
Mozambique		—	6	—	1,679
Zanzibar		—	7	—	9,643
United States		—	472	—	8,330
Other Countries		—	12	—	25
		—	96,062	—	54,182

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
COIR, MANUFACTURES OF (excluding rope):					
United Kingdom	Cwt.	289	542	164,671	145,332
Aden	„	...	...	262	224
Ceylon	„	13,332	12,836	869	855
China, Hong Kong	„	...	...	33	61
Straits Settlements	„	...	...	643	743
Cape Colony	„	...	...	295	371
Mauritius	„	...	...	2,207	1,723
Natal	„	...	...	391	1,152
Australia	„	...	...	899	1,721
Austria	„	...	...	78	139
Belgium	„	...	...	12,126	11,551
France	„	...	...	20,764	16,847
Germany	„	...	...	34,543	30,103
Italy	„	...	...	3,720	3,265
Arabia	„	23	18	1,070	811
Japan	„	...	...	139	293
Maldive Islands	„	388	396		
Mekran and Sonmiani	„	...	...	48	35
Persia	„	...	...	622	407
Siam	„	...	...	13	37
Turkey in Asia	„	...	...	506	313
Abyssinia	„	...	...	43	31
Egypt	„	...	...	2	7
Mozambique	„	...	...	78	103
Zanzibar	„	50	30	129	83
United States	„	...	...	14,408	16,648
	„	14,082	13,822	258,559	232,855
CORALS:					
United Kingdom	Lbs.	114	85	1	2
Aden	„	...	...	510	32
Ceylon	„	8,978	8,817	87	45
Straits Settlements	„	815	526	13,634	17,888
Mauritius	„	...	...	112	70
Austria	„	398	204		
Belgium	„	47	50		
France	„	5,803	3,985		
Germany	„	47	760		
Italy	„	158,192	106,466	3,674	2,456
Arabia	„	...	...	2,104	123
Java	„	...	...	177	178
Persia	„	...	...	5,651	3,227
Sumatra	„	...	...	13,234	5,307
Turkey in Asia	„	21	33	254	385
Egypt	„	150	120		
Madagascar	„	...	...	41	16
Mozambique	„	...	...	27	27
Zanzibar	„	...	...	144	134
	„	174,565	121,046	39,650	29,890
HIDES AND SKINS:					
United Kingdom	Cwt.	1,245	40,807	234,769	2,167,288
Aden	„	...	...	95	695
Ceylon	„	419	2,048	120	1,344
China, Hong Kong	„	15	184	80	907
Straits Settlements	„	114	1,408	6,217	64,997
Mauritius	„	5	56		
Natal	„	...	...	—	1
Australia	„	...	...	17	324
Austria	„	1	32	32	178
Belgium	„	18	857	7,626	106,444
France	„	24	587	879	13,095
Germany	„	17	776	2	28
Italy	„	...	...	251	1,765
Arabia	„	9	120	2	16
China, Treaty Ports	„	...	...	26	301
Japan	„	...	...	942	9,811
Persia	„	142	1,353	84	515
Turkey in Asia	„	1	8	4	31
Egypt	„	...	...	546	1,527
Zanzibar	„	...	...	33	239
United States	„	...	...	47,306	586,983
	„	2,010	48,235	298,931	2,956,489

No. 12—*continued.*

QUANTITY and VALUE of IMPORTS and EXPORTS of PRINCIPAL ARTICLES in 1892–93, distinguishing COUNTRIES—*continued.*

ARTICLES AND COUNTRIES.		IMPORTS.		EXPORTS.	
		Quantity.	Value.	Quantity.	Value.
VII. ARTICLES MANUFACTURED AND PARTLY MANUFACTURED—*cont.*					
IVORY:					
United Kingdom		—	6,973	—	1,070
China, Hong Kong		—	278		
France		—	1,940	—	630
Germany		—	9,033	—	1
Italy		—	6		
Japan		—	2		
Abyssinia		...	...	—	20
		—	18,232	—	1,721
JEWELLERY AND PLATE:					
United Kingdom		—	53,038	—	17,732*
Gibraltar		...	...	—	838
Malta		—	6	—	626
Aden		—	579	—	178
Ceylon		—	479	—	1,656
China, Hong Kong		—	5,722	—	334
Straits Settlements		—	1,240	—	1,155
Mauritius		—	155	—	738
Natal		...	...	—	239
Australia		—	13	—	134
Austria		—	13,363	—	628
Belgium		—	1,405		
France		—	4,353	—	265
Germany		—	4,989	—	330
Holland		—	350		
Italy		—	1,646	—	961
Arabia		—	550	—	422
China, Treaty Ports		—	90	—	3
Java		...	...	—	106
Mekran and Sonmiani		...	...	—	20
Persia		—	138	—	213
Turkey in Asia		—	50	—	150
Abyssinia		...	...	—	44
Egypt		—	627	—	1,658
Mozambique		—	42	—	124
Zanzibar		—	3,969	—	1,155
South America		...	...	—	63
United States		—	639	—	7,397
		—	93,443	—	37,169
LAC (excluding stick lac and lac-dye):					
United Kingdom	Cwt.	...	...	67,417	411,608
Ceylon	„	...	...	2	10
China, Hong Kong	„	...	...	191	1,235
Straits Settlements	„	...	...	574	2,651
Mauritius	„	...	...	1	2
Australia	„	...	...	532	3,150
Austria	„	...	...	3,160	19,800
France	„	...	...	4,977	29,562
Germany	„	...	...	6,427	41,945
Holland	„	...	...	294	2,200
Italy	„	...	...	1,339	9,167
Arabia	„	...	...	4	21
Japan	„	...	...	96	594
Maldive Islands	„	...	...	2	7
Mekran and Sonmiani	„	...	...	1	9
Persia	„	...	...	5	36
Turkey in Asia	„	...	...	16	85
Egypt	„	...	...	1	9
Zanzibar	„	2	6	1	3
United States	„	...	...	40,573	258,069
	„	2	6	125,613	780,163

* The value of plate of Indian manufacture exported to the United Kingdom was Rx. 2,589.

No. 12—*concluded.*

Quantity and Value of Imports and Exports of Principal Articles in 1892–93, distinguishing Countries—*concluded.*

Articles and Countries.		Imports.		Exports.	
		Quantity.	Value.	Quantity.	Value.
VII. Articles Manufactured and partly Manufactured—*cont.*					
Paints and Colours:					
United Kingdom	Cwt.	109,005	154,812	21,083	15,018
Gibraltar	„	...	...	2	29
Aden	„	...	...	494	2,512
Ceylon	„	103	138	410	710
China, Hong Kong	„	1,560	23,113	104	208
Straits Settlements	„	349	3,881	34	88
Mauritius	„	...	...	478	519
Natal	„	...	...	2	18
Australia	„	24	25		
Austria	„	109	1,128		
Belgium	„	19,453	26,002	—	1
France	„	2,017	1,530	20	93
Germany	„	858	4,260	25	15
Italy	„	1,346	2,070	20	120
Arabia	„	3	4	258	712
Maldive Islands	„	...	...	77	22
Mekran and Sonmiani	„	...	...	9	9
Persia	„	35,703	5,262	270	408
Siam	„	...	...	12	12
Turkey in Asia	„	2	2	820	1,059
Abyssinia	„	...	...	19	22
Egypt	„	...	...	2	55
Madagascar	„	...	...	24	19
Mozambique	„	...	...	685	569
Zanzibar	„	...	...	1,436	887
United States	„	5	52		
Other Countries	„	...	...	29	29
	„	170,537	222,279	26,313	23,134
Stationery (including paper and printing materials):					
United Kingdom		—	473,555	—	1,973
Aden		—	59	—	2,008
Ceylon		—	585	—	6,092
China, Hong Kong		—	9,424	—	819
Straits Settlements		—	17,354	—	3,529
Mauritius		—	24	—	223
Natal		...	...	—	175
Australia		—	64	—	27
Austria		—	112,546	—	26
Belgium		—	26,184	—	578
France		—	1,947		
Germany		—	49,254	—	87
Holland		—	1,991		
Italy		—	1,853	—	10
Norway		—	628		
Sweden		—	381		
Arabia		...	...	—	569
China, Treaty Ports		—	229	—	263
Japan		—	99	—	2
Java		...	...	—	24
Maldive Islands		...	...	—	1
Mekran and Sonmiani		...	...	—	23
Persia		—	1,165	—	3,061
Siam		...	...	—	410
Turkey in Asia		—	16	—	967
Abyssinia		...	...	—	6
Egypt		—	47	—	41
Mozambique		...	...	—	963
Zanzibar		—	7	—	1,044
United States		—	728	—	248
Other Countries		...	...	—	30
		—	698,140	—	23,199
Other Sorts		—	3,917,942	—	709,045
Total Articles Manufactured and partly Manufactured		—	36,223,187	—	18,787,626
Grand Total		—	62,605,030	—	106,535,997

No. 13.

Quantity and Value of Imports of Government Stores into British India.

ARTICLES.	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Apparel (including haberdashery, but excluding hosiery):										
United Kingdom	—	49,192	—	45,572	—	68,077	—	45,476	—	39,716
Other Countries	—	180	—	1,046	0	472	—	125	—	108
	—	49,372	—	46,618	—	68,549	—	45,601	—	39,824
Arms, Ammunition, &c.:										
United Kingdom	—	156,498	—	262,373	—	276,061	—	496,774	—	564,796
Other Countries	—	4,703	—	13,206	—	3,314	—	5,243	—	3,202
	—	161,201	—	275,579	—	279,375	—	502,017	—	567,998
Books and Printed Matter (including maps, charts, &c.):										
United Kingdom	—	96,903	—	70,843	—	67,199	—	65,150	—	65,347
Other Countries	—	155	—	67	—	111	—	340	—	227
	—	97,058	—	70,910	—	67,310	—	65,490	—	65,574
Building and Engineering Materials:										
United Kingdom	—	79,207	—	75,770	—	84,461	—	9,166	—	29,770
Carriages, Carts, &c. (excluding railway carriages), and parts thereof:										
United Kingdom	—	292	—	113	0	470	—	11	—	22
Other Countries	0	0	—	4	0	0	0	0	0	0
	—	292	—	117	0	470	—	11	—	22
Chemical Products:										
United Kingdom	—	4,583	—	10,990	—	13,300	—	10,261	—	11,644
Other Countries	—	5	—	715	—	0	—	759	—	205
	—	4,588	—	11,705	—	13,300	—	11,020	—	11,849
Coal (including coke and patent fuel):	Tons.		Tons.		Tons.		Tons.		Tons.	
United Kingdom	44,365	102,298	55,187	120,629	32,340	62,373	36,653	58,098	55,156	100,507
Other Countries	0	0	10	20	0	0	0	0	0	0
	44,365	102,298	55,197	120,649	32,340	62,373	36,653	58,098	55,156	100,507
Cotton:										
Twist and Yarn:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom	161*	186	1,318	218	2,155	143	6,312	143	20,171	1,114
Manufactures:										
Piece Goods:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom	268,192*	4,507	247,842	4,349	220,606	5,115	242,860	4,742	800,296	30,435
Other sorts:										
United Kingdom	—	4,232	—	2,849	—	1,293	—	1,087	—	1,551
	—	8,925	—	7,416	—	6,551	—	5,972	—	33,100

* Figures defective.

No. 13—*continued.*

QUANTITY and VALUE of IMPORTS of GOVERNMENT STORES into BRITISH INDIA—*continued.*

ARTICLES.	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
DRUGS AND MEDICINES:										
Quinine:	Lbs.								Lbs.	
United Kingdom -	552	1,122	0	0	0	0	0	0	0	0
Other Sorts:										
United Kingdom -	—	16,914	—	15,791	—	10,780	—	20,293	—	24,872
Other Countries -	—	15	0	0	0	0	0	0	0	0
	—	18,051	—	15,791	—	10,780	—	20,293	—	24,872
EARTHENWARE AND PORCELAIN:										
United Kingdom -	—	4,948	—	5,721	—	6,913	—	13,474	—	3,214
Other Countries -	0	0	0	0	0	0	0	0	—	1
	—	4,948	—	5,721	—	6,913	—	13,474	—	3,215
FLAX:										
Twist and Yarn:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom -	—	129	2,135	257	3,651	368	6,626	587	12,624	812
Manufactures:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom	231,415*	9,693	229,245*	12,166	396,985	16,454	308,850	11,642	383,574	16,353
	—	3,265	—	1,315	—	1,327	—	2,417	—	2,421
Other Countries -	0	0	0	0	0	0	0	0	—	1
	—	13,087	—	13,738	—	18,149	—	14,646	—	19,587
GLASS AND GLASSWARE:										
United Kingdom -	—	15,501	—	9,361	—	11,774	—	10,632	—	18,585
Other Countries -	0	0	—	3	0	0	—	1	0	0
	—	15,501	—	9,364	—	11,774	—	10,633	—	18,585
HARDWARE AND CUTLERY:										
United Kingdom -	—	76,350	—	80,901	—	81,795	—	108,893	—	123,415
Other Countries -	—	877	—	183	—	161	—	13	—	108
	—	77,227	—	81,084	—	81,956	—	108,906	—	123,523
INSTRUMENTS AND APPARATUS:										
Musical:										
United Kingdom -	—	814	—	430	—	482	—	624	—	1,163
Other Countries -	0	0	0	0	—	9	0	0	0	0
Scientific, &c.:										
United Kingdom -	—	48,965	—	27,876	—	34,399	—	48,429	—	61,538
Other Countries -	—	475	—	25	—	385	—	175	—	598
	—	50,254	—	28,331	—	35,275	—	49,228	—	63,299
LEATHER MANUFACTURES:										
Boots and Shoes:	Pairs.		Pairs.		Pairs.		Pairs.		Pairs.	
United Kingdom -	50,469	33,542	84,894*	50,031	2,235	1,357	19,166	15,404	24,097	14,756
Other Sorts:										
United Kingdom -	—	10,888	—	4,064	—	17,613	—	6,820	—	22,940
Other Countries -	—	6	—	12	—	51	0	2	0	0
	—	44,436	—	54,107	—	19,021	—	22,226	—	37,696

* Figures defective.

No. 13—*continued.*

QUANTITY and VALUE of IMPORTS of GOVERNMENT STORES into BRITISH INDIA—*continued.*

ARTICLES.	1888-89.		1889-90.		1890-91.		1891-92.		1892-93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
LIQUORS:										
Ale, Beer, and Porter:	Gals.		Gals.		Gals.		Gals.		Gals.	
United Kingdom -	415,816	22,220	364,899	22,599	236,700	14,608	98,800	7,250	0	0
Other Countries -	0	0	0	0	0	0	1	0	16	4
	415,816	22,220	364,899	22,599	236,700	14,608	98,801	7,250	16	4
Spirits:										
United Kingdom	4,391	747	622	580	17	6	188	67	0	0
Other Countries -	0	0	1,861	233	57	7	0	0	0	0
	4,391	747	2,483	813	74	13	188	67	—	—
Wines and Liqueurs:										
United Kingdom -	2,220	786	961*	565	0	0	0	0	0	0
Other Countries -	0	0	0	0	0	0	0	0	0	0
	2,220	786	961	565	—	--	—	—	—	—
Total Liquors -	422,427	23,753	368,343*	23,977	236,774	14,621	98,989	7,317	16	4
MACHINERY AND MILLWORK:										
United Kingdom -	—	83,348	—	56,043	—	96,620	—	68,361	—	118,732
Other Countries -	—	9,518	0	0	0	0	0	0	0	0
	—	92,866	—	56,043	—	96,620	—	68,361	—	118,732
METALS:	Cwt.		Cwt.		Cwt.		Cwt.		Cwt.	
United Kingdom -	385,878*	351,714	246,644*	277,639	377,566*	378,312	421,761	378,171	545,183	433,849
Other Countries -	476	556	33	83	33	7	27	300	1	1
	386,354	352,270	246,677	277,722	377,599	378,319	421,788	378,471	545,184	433,850
PAPER AND PASTEBOARD:										
United Kingdom -	—	78,457	—	34,481	—	55,056	—	43,808	—	45,801
Other Countries -	0	0	0	0	0	0	—	6	0	0
	—	78,457	0	34,481	0	55,056	--	43,814	—	45,801
PRINTING AND LITHOGRAPHING MATERIALS:										
United Kingdom -	—	5,418	—	5,511	—	4,564	—	3,035	—	6,012
Other Countries -	—	19	0	0	0	63	0	0	0	0
	—	5,437	—	5,511	—	4,627	—	3,035	—	6,012

* Figures defective.

No. 13—*concluded.*

QUANTITY and VALUE of IMPORTS of GOVERNMENT STORES into BRITISH INDIA—*concluded.*

ARTICLES.	1888-89.		1889-90.		1890-91.		1891-92.		1892-93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
RAILWAY PLANT AND ROLLING STOCK:										
Locomotives and Carriages, &c.:										
United Kingdom -	—	451,519	—	205,857	—	188,339	—	272,986	—	485,837
Materials for Construction:										
United Kingdom -	—	735,826	—	879,892	—	1,046,614	—	748,312	—	801,804
Other Countries -	—	13,355	0	0	0	0	0	0	—	1,410
	—	1,200,700	—	1,085,749	—	1,234,933	—	1,021,298	—	1,289,051
STATIONERY (excluding paper):										
United Kingdom -	—	30,319	—	23,082	—	26,046	—	24,950	—	35,003
Other Countries -	—	49	—	1,735	—	95	—	0	0	0
	—	30,368	—	24,817	—	26,141	—	24,950	—	35,003
TELEGRAPH MATERIALS:										
United Kingdom -	—	81,492	—	66,204	—	76,452	—	95,105	—	70,317
Other Countries -	—	243	—	295	—	428	—	83	—	214
	—	81,735	—	66,499	—	76,880	—	95,188	—	70,531
WOOL, MANUFACTURES OF:										
Piece goods:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom -	856,744	147,663	679,773*	134,024	709,205	126,650	681,581	109,076	952,961	147,961
Other sorts:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom -	9,234*	2,935	15,870	8,290	39,998*	7,737	32,783	3,789	37,869	2,834
Other Countries -	0	0	0	0	0	0	0	0	658	50
	—	150,598	—	142,314	—	134,387	—	112,865	—	150,845
ALL OTHER ARTICLES:										
United Kingdom -	—	123,316	—	94,588	—	134,499	—	131,162	—	363,216
Other Countries -	—	4,204	—	8,767	—	18,130	—	21,684	—	7,780
	—	127,520	—	103,355	—	152,629	—	152,846	—	370,996
TOTAL IMPORTS OF GOVERNMENT STORES:										
United Kingdom -	—	2,835,789	—	2,610,974	—	2,917,123	—	2,816,195	—	3,646,338
Other Countries -	—	34,360	—	26,394	—	23,347	—	28,731	—	13,909
Total -	—	2,870,149	—	2,637,368	—	2,940,470	—	2,844,926	—	3,660,247

* Figures defective.

No. 14.

QUANTITY and VALUE of EXPORTS of GOVERNMENT STORES (distinguishing Indian and Foreign Produce and Manufacture*) from BRITISH INDIA.

ARTICLES.	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
APPAREL:										
United Kingdom	—	200	—	43	—	1,302	—	696	—	84
	—	*677*	—	*36*	—	*817*	—	*624*	—	*892*
Other Countries	—	2,244	—	1,047	—	1,355	—	3,010	—	1,093
	—	*671*	—	*333*	—	*1,010*	—	*2,682*	—	*1,567*
ARMS AND AMMUNITION:										
United Kingdom	—	24	0	0	—	1,940	—	4	—	593
	—	*3,716*	—	*5,726*	—	*2,651*	—	*47,400*	—	*5,114*
Other Countries	—	4,235	—	3,121	—	3,077	—	16,676	—	6,635
	—	*4,625*	—	*6,596*	—	*9,712*	—	*9,424*	—	*3,871*
CHEMICALS, DRUGS AND MEDICINES:										
United Kingdom	—	*60*	0	0	0	*1,990*	*0*	*0*	—	*15*
Other Countries	—	14	—	50	—	3	—	1,475	—	39
	—	*589*	—	*762*	—	*2,468*	—	*1,103*	—	*993*
COTTON:										
Twist and Yarn:	Lbs.		Lbs.		Lbs.		Lbs.		Lbs.	
United Kingdom	0	0	0	0	0	0	—	—	0	0
Other Countries	0	0	0	0	*112*	*8*	*0*	*0*	*0*	*0*
	40	1	57	2	8	0	43	1	0	0
Manufactures:										
Piece goods:	Yds.		Yds.		Yds.		Yds.		Yds.	
United Kingdom	0	0	0	0	0	0	—	—	0	0
Other Countries	7,550	273	165	3	166	3	188	3	217	4
	0	0	*58*	*6*	0	0	*1,345*	*33*	—	*6*
Other sorts:										
United Kingdom	0	0	—	*29*	0	0	*0*	*0*	*0*	*0*
Other Countries	—	46	—	99	—	239	—	307	—	287
	—	*21*	—	*32*	—	*485*	—	*72*	*0*	*0*
FLAX, MANUFACTURES OF:										
United Kingdom	0	0	0	0	0	0	0	0	0	0
			—	*5*	0	0	*0*	*0*	*0*	*0*
Other Countries	—	*169*	—	16	0	0	—	38	0	0
			—	*166*	—	*210*	—	*94*	—	*13*
METALS:	Cwt.		Cwt.		Cwt.		Cwt.		Cwt.	
United Kingdom	0	0	—	2	—	0	0	0	—	350
	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	—	*12*
Other Countries	—	28,950	—	23,332	27†	32,518	35†	18,220	—	10,280
	191†	*498*	*227*	*1,676*	*540*	*745*	*36*	*90*	—	*109*
TELEGRAPH MATERIALS:										
United Kingdom	—	*120*	—	*2,578*	—	0	—	*600*	—	*160*
Other Countries	—	*3,598*	—	202	—	30	—	16	0	0
			—	*3,277*	—	*2,916*	—	*8,360*	—	*8,959*
WOOL, MANUFACTURES OF:										
United Kingdom	—	590	0	0	0	0	0	0	0	0
			Yds.		Yds.		Yds.		Yds.	
	Yds.		200	11	800	35	3	0	6	1
	843	*93*	*1,626*	*187*	*1,205*	*74*	*510*	*199*	*330*	*78*
Other Countries					Lbs.		Lbs.		Lbs.	
	36	12	0	0	1,481	80	2,482	228	642	42
					37†	*12*	*297*	*24*	—	*7*
ALL OTHER ARTICLES:										
United Kingdom	—	2,805	—	1,430	—	6,025	—	2,748	—	2,758
	—	*7,506*	—	*1,124*	—	*6,040*	—	*2,508*	—	*915*
Other Countries	—	5,360	—	6,334	—	8,323	—	11,382	—	11,569
	—	*4,264*	—	*5,311*	—	*7,590*	—	*9,365*	—	*3,032*
TOTAL EXPORTS OF GOVERNMENT STORES:										
United Kingdom	—	15,698	—	10,973	—	20,735	—	54,580	—	10,893
Other Countries	—	55,663	—	52,563	—	70,891	—	83,062	—	48,585
Total	—	71,361	—	63,536	—	91,626	—	137,582	—	59,478

* The figures in *italics* represent re-exports. † Figures defective.

No. 15.

Imports of Treasure from different Countries.

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
GOLD:					
United Kingdom	1,065,659	2,443,874	3,814,111	1,565,648	598,064
British Possessions:					
Malta	0	0	1,938	2,646	0
Aden	110,350	35,706	64,122	229,463	49,083
Ceylon	0	9,505	1,737	14,101	0
China, Hong Kong	457,248	737,698	736,267	959,850	536,776
Straits Settlements	14,473	9,286	27,249	4,823	2,816
Mauritius	0	0	169	840	0
Natal	0	0	1,301	0	0
Australia	511,928	635,989	1,104,057	552,252	65,886
	1,093,999	1,428,184	1,936,840	1,763,975	654,561
Foreign Countries:					
Austria	4,590	783	6,264	32	241
France	70,801	124,392	128,287	104,935	45,542
Germany	0	0	0	0	73
Italy	10,238	7,278	0	2,165	16
Russia	0	13,750	2,148	0	0
Turkey in Europe	0	200	550	0	0
Arabia	212,533	157,541	105,666	186,950	205,592
China, Treaty Ports	478,039	596,981	227,163	240,520	115,330
Persia	4,241	5,124	8,348	19,512	12,810
Turkey in Asia	20,250	35,379	38,702	11,374	11,888
Abyssinia	495	714	10,818	9,469	3,235
Egypt	110,761	186,515	176,542	168,117	72,291
Madagascar	0	600	104	3,043	9,832
Mozambique	42,536	66,431	18,738	11,238	40,711
Zanzibar	4,946	3,281	21,051	31,951	11,519
United States	0	0	5,500	0	0
Other Countries	0	0	0	0	84
	959,430	1,198,969	749,881	789,306	529,164
Total	3,119,088	5,071,027	6,500,832	4,118,929	1,781,789
SILVER:					
United Kingdom	6,882,639	9,769,128	7,540,834	6,202,748	12,579,262
British Possessions:					
Aden	17,750	78,323	93,096	32,687	21,621
Ceylon	53,489	155,027	93,720	70,572	193,332
China, Hong Kong	1,250,103	613,864	2,294,553	1,729,863	587,768
Straits Settlements	26,533	47,478	1,294,705	47,083	17,103
Cape Colony	0	0	0	100	0
Mauritius	10,380	420	48,320	35,858	87,300
Australia	22,602	113,812	500,313	552,637	621,489
	1,380,857	1,008,924	4,324,707	2,468,800	1,528,613
Foreign Countries:					
Austria	132,427	108,104	972,842	97,380	138,290
France	109,382	204,885	101,124	55,839	240,745
Italy	177,210	20,000	100,752	298	0
Arabia	235,182	408,609	419,546	269,520	284,034
China, Treaty Ports	688,450	317,600	1,335,216	765,300	278,270
Japan	0	37,500	109,060	0	0
Mekran and Sonmiani	670	140	2,852	2,245	1,893
Persia — *Private*	75,748	125,835	179,013	39,113	68,712
Persia — *Government*	0	200	15,000	0	0
Siam	287	0	0	0	0
Turkey in Asia	66,909	122,055	194,392	26,972	14,426
Abyssinia	0	5,378	39,994	3,639	227
Egypt	9,435	6,624	28,190	8,318	1,463
Madagascar	2,495	12,377	10,088	12,535	13,459
Mozambique	648	3,173	2,783	2,115	1,786
Zanzibar	37,506	45,282	10,883	24,040	35,536
United States	925,724	188,730	42,310	568,200	31,500
Other Countries	303	3,930	4,068	6,671	9,805
	2,462,376	1,610,422	3,568,113	1,932,185	1,120,116
Total	10,725,872	12,388,474	15,433,654	10,603,733	15,228,021

No. 15—*concluded.*

IMPORTS of TREASURE from DIFFERENT COUNTRIES—*concluded.*

	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
TOTAL GOLD AND SILVER:					
UNITED KINGDOM	7,948,298	12,213,002	11,354,946	7,768,396	13,177,325
BRITISH POSSESSIONS:					
Malta	0	0	1,938	2,646	0
Aden	128,100	114,029	157,218	262,150	70,704
Ceylon	53,489	164,532	95,457	84,673	193,332
China, Hong Kong	1,707,351	1,351,562	3,030,820	2,689,712	1,124,544
Straits Settlements	41,005	56,764	1,321,953	51,906	19,918
Cape Colony	0	0	0	100	0
Mauritius	10,380	420	48,489	36,698	87,300
Natal	0	0	1,301	0	0
Australia	534,530	749,800	1,604,370	1,104,889	687,375
	2,474,855	2,437,107	6,261,546	4,232,774	2,183,173
FOREIGN COUNTRIES:					
Austria	137,018	108,887	979,105	97,412	138,532
France	180,183	329,277	229,411	160,774	286,287
Germany	0	0	0	0	73
Italy	187,448	27,278	100,753	2,463	16
Russia	0	13,750	2,148	0	0
Turkey in Europe	0	200	550	0	0
Arabia	447,715	566,150	525,213	456,471	489,626
China, Treaty Ports	1,166,489	914,582	1,562,379	1,005,820	393,600
Japan	0	37,500	109,060	0	0
Mekran and Sonmiani	670	140	2,852	2,245	1,894
Persia — *Private*	79,989	130,958	187,361	108,624	81,522
Persia — *Government*	0	200	15,000	0	0
Siam	287	0	0	0	0
Turkey in Asia	87,159	157,434	233,094	38,346	26,313
Abyssinia	495	6,092	50,812	13,108	3,462
Egypt	120,196	193,139	204,731	176,435	73,754
Madagascar	2,495	12,977	10,191	15,578	23,292
Mozambique	43,184	69,604	21,521	13,353	42,497
Zanzibar	42,452	48,564	31,935	55,992	47,055
United States	925,724	188,730	47,810	568,200	31,500
Other Countries	303	3,930	4,068	6,671	9,889
	3,421,807	2,809,392	4,317,994	2,721,492	1,649,312
GRAND TOTAL	13,844,960	17,459,501	21,934,486	14,722,662	17,009,810

No. 16.

Exports of Treasure to different Countries.

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
GOLD:					
United Kingdom	286,187	444,722	821,873	1,683,481	4,244,102
British Possessions:					
Gibraltar	0	0	0	39	0
Malta	0	7	0	0	0
Aden	187	160	133	478	0
Ceylon	2,000	1,470	0	0	0
China, Hong Kong	0	0	0	0	0
Straits Settlements	1,400	0	1,394	307	0
	3,587	1,637	1,527	824	0
Foreign Countries:					
Austria	3,111	1,351	4,515	491	292,377
France	2,300	3,170	0	14,630	56,295
Turkey in Europe	0	0	0	860	403
Arabia	0	0	792	190	0
Java	2,975	0	0	0	0
Persia	534	2,166	1,019	572	41
Turkey in Asia	6,450	1,890	30,687	4,089	0
Egypt	0	15	40	0	0
Zanzibar	0	773	4,207	0	54
United States	0	0	0	0	1,200
	15,380	9,365	41,260	20,832	350,370
Total	305,154	455,724	864,660	1,705,137	4,594,472
SILVER:					
United Kingdom — *Private*	22,725	6,705	30,209	87,091	129,876
United Kingdom — *Government*	0	0	1,650	0	0
British Possessions:					
Malta	0	0	0	0	200
Aden — *Private*	73,160	70,173	31,480	108,548	86,670
Aden — *Government*	77,300	60,000	47,000	140,000	20,500
Ceylon	530,800	602,221	650,750	769,150	576,215
China, Hong Kong	28,700	28,656	400	0	0
Straits Settlements	76,707	112,557	38,668	22,146	47,267
Mauritius	139,450	115,300	0	0	889,795
Natal	0	0	0	0	100
Other Countries	4	0	0	0	0
	926,121	988,907	768,298	1,039,844	1,620,747
Foreign Countries:					
Austria	172	179	12	17	9
France	52,528	91,405	31,650	35,086	46,302
Greece	0	50	0	0	0
Italy	1,500	200	7,630	0	0
Arabia — *Private*	115,759	132,442	89,486	171,197	172,238
Arabia — *Government*	0	1,000	0	0	0
China, Treaty Ports	10,068	0	83,851	0	0
Java	15,240	1,800	0	0	0
Maldive Islands	0	0	100	0	0
Mekran and Sonmiani — *Private*	7,799	510	192	650	1,050
Mekran and Sonmiani — *Government*	3,170	3,200	2,482	3,330	9,127
Persia — *Private*	184,562	102,722	52,412	110,175	115,817
Persia — *Government*	380	202	140	170	302
Philippine Islands	13,800	0	0	0	0
Siam	0	0	0	0	25,000
Turkey in Asia	21,610	18,432	1,475	82,106	137,354
Abyssinia	3,545	1,200	0	845	850
Egypt	0	16	90	1,600	600
Mozambique	16,548	9,630	6,500	6,000	2,000
Zanzibar	83,586	91,418	182,051	43,438	103,000
United States	80	0	0	0	180
Other Countries	0	580	290	0	0
	530,347	454,986	458,361	454,614	613,829
Total	1,479,193	1,450,598	1,258,518	1,581,549	2,364,452

No. 16—*concluded.*

EXPORTS of TREASURE to DIFFERENT COUNTRIES—*concluded.*

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
TOTAL GOLD AND SILVER:					
UNITED KINGDOM — *Private*	308,911	451,426	852,083	1,770,572	4,373,978
UNITED KINGDOM — *Government*	0	0	1,650	0	0
BRITISH POSSESSIONS:					
Gibraltar	4	0	0	39	0
Malta	0	7	0	0	200
Aden — *Private*	73,348	70,333	31,613	109,026	86,670
Aden — *Government*	77,300	60,000	47,000	140,000	20,500
Ceylon	532,800	603,691	650,750	769,150	576,215
China, Hong Kong	28,700	28,656	400	0	0
Straits Settlements	78,107	112,557	40,062	22,453	47,267
Mauritius	139,450	115,300	0	0	889,794
Natal	0	0	0	0	100
	929,709	990,544	769,825	1,040,668	1,620,746
FOREIGN COUNTRIES:					
Austria	3,293	1,530	4,526	509	292,387
France	54,828	94,575	31,650	49,716	102,597
Greece	0	50	0	0	0
Italy	1,500	200	7,630	0	0
Turkey in Europe	0	0	0	860	403
Arabia — *Private*	115,759	132,442	90,278	171,386	172,238
Arabia — *Government*	0	1,000	0	0	0
China, Treaty Ports	10,068	0	83,851	0	0
Java	18,215	1,800	0	0	0
Maldive Islands	0	0	100	0	0
Mekran and Sonmiani — *Private*	7,799	510	192	650	1,050
Mekran and Sonmiani — *Government*	3,170	3,200	2,482	3,330	9,127
Persia — *Private*	185,096	104,889	53,431	110,747	115,858
Persia — *Government*	380	202	140	170	302
Philippine Islands	13,800	0	0	0	0
Siam	0	0	0	0	25,000
Turkey in Asia	28,060	20,323	32,162	86,195	137,354
Abyssinia	3,545	1,200	0	845	850
Egypt	0	31	130	1,600	600
Mozambique	16,548	9,630	6,500	6,000	2,000
Zanzibar	83,586	92,190	186,258	43,438	103,054
United States	80	0	0	0	1,380
Other Countries	0	580	290	0	0
	545,727	464,352	499,620	475,446	964,200
GRAND TOTAL	1,784,347	1,906,322	2,123,178	3,286,686	6,958,924

No. 17.

GROSS AMOUNT of CUSTOMS DUTY collected on ARTICLES of MERCHANDISE.

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
IMPORT DUTIES :					
Arms, Ammunition, and Military Stores :					
Firearms, and parts thereof	18,439	17,985	21,241	24,457	23,677
Gunpowder, common	1,261	207	583	775	1,005
„ sporting	2,036	1,754	1,911	2,359	1,859
Other sorts	4,353	3,921	4,313	4,139	4,622
	26,089	23,867	28,048	31,730	31,163
Liquors :					
Ale, Beer, and Porter	15,205	17,439	17,325	18,659	19,078
Spirits	482,854	492,371	533,385	518,838	543,226
Wines and Liqueurs	50,074	49,236	50,010	51,884	47,790
Other sorts	151	219	180	205	158
	548,284	559,265	600,900	589,586	610,252
Opium	306	285	325	349	330
Salt	2,301,427	2,379,311	2,449,084	2,531,738	2,546,638
Petroleum	117,489	162,392	165,040	174,662	202,309
Articles not specified	159	133	138	132	116
TOTAL	2,993,754	3,125,253	3,243,535	3,328,197	3,390,808
EXPORT DUTIES :					
Rice, in the husk	10,218	9,136	13,868	12,267	15,182
„ not in the husk	602,455	709,146	907,171	866,946	726,012
TOTAL	612,673	718,282	921,039	879,213	741,194
GRAND TOTAL	3,606,427	3,843,535	4,164,574	4,207,410	4,132,002

No. 18.

CUSTOMS TARIFF.

Articles.	Tariff Valuation.	Rate of Duty.
IMPORT TARIFF.		
ARMS, AMMUNITION, AND MILITARY STORES:		
Fire-arms and parts thereof—		Rs. As.
1. Fire-arms other than pistols	Each	50 0
2. Barrels for the same, whether single or double	„	30 0
3. Pistols	„	15 0
4. Barrels for the same, whether single or double	„	10 0
5. Springs used for fire-arms	„	8 0
6. Gunstocks, sights, blocks and rollers	„	5 0
7. Revolver-breeches, for each cartridge they will carry	„	2 8
8. Extractors, nippers, heel-plates, pins, screws, tangs, bolts, thumb-pieces, triggers, trigger-guards, hammers, pistons, plates, and all other parts of a fire-arm not herein otherwise provided for, and all tools used for cleaning or putting together or loading the same	„	1 8
9. Machines for making or loading or closing cartridges	„	10 0
10. „ for capping cartridges	„	2 8

Proviso.—No duty in excess of 10 per cent. ad valorem shall be levied upon any of the articles mentioned in the above list when they are imported in reasonable quantity, for his own private use, by any person lawfully entitled to possess the same.

When any articles which have been otherwise imported, and upon which duty has been levied or is leviable under this number, are purchased retail from the importer by a person lawfully entitled as aforesaid, in reasonable quantity, for his own private use, the importer may apply to the Customs Collector for a refund or remission (as the case may be) of so much of the duty thereon as is in excess of 10 per cent. ad valorem; and if such Collector is satisfied as to the identity of the articles, and as to the importer being in other respects entitled to such refund or remission, he shall grant the same accordingly.

Exemptions:—

1. Articles falling under the 5th, 6th, 8th, 9th, or 10th head of the above list, when they appertain to a fire-arm falling under the 1st or 3rd head, and are fitted into the same case with such fire-arm.

2. Arms forming part of the regular equipment of an officer entitled to wear diplomatic, military, or police uniform.

3. A sword, a revolver, or a pair of pistols when accompanying a military officer or commissioned officer of a volunteer corps, or certified by the commandant of the corps to be imported by the officer for the purposes of his equipment.

4. Morris's tubes and patent ammunition when imported by officers commanding British and native regiments or volunteer corps for the instruction of their men.

5. Swords imported for presentation as army or volunteer prizes.

6. Ornamental arms possessing antiquarian value, provided the chief Customs authority is satisfied in each case that the arms are practically unserviceable, and that weapons intended for offensive or defensive purposes are not imported under cover of the exemption.

7. Bows and arrows.

8. Bullets, bird-shot, gunwads, and wire cartridges.

9. Bullet moulds.

10. Arms which, having paid duty at Aden on import into that settlement, are subsequently within three years imported into any Customs port of British India.

Gunpowder, common	Rs. As. 0 5 per lb.	10 per cent.
„ sporting	1 0 „	
All other sorts of arms, ammunition, and military stores	Ad valorem	10 per cent.

Explanation.—The expression "Arms, Ammunition, and Military Stores" includes—

(*a*) all articles which are "arms" or "ammunition" within the meaning of the Indian Arms Act, 1878;

(*b*) any articles which the Governor-General in Council may from time to time, by notification in the Gazette of India, are declared to be "military stores" for the purposes of the Indian Tariff Act, 1882.

CUSTOMS TARIFF—*continued.*

Articles.	Tariff Valuation.	Rate of Duty.
LIQUORS:		
Ale, beer and porter, except when condensed or concentrated - -	Per Impl. Gallon or 6 quart bottles.	Rs. As. 0 1
Cider, and other fermented liquors - - - - -		
Spirit, intended to be used exclusively in arts or manufactures, or in chemistry, which has been rendered effectually and permanently unfit for human consumption - - - - -	Ad valorem.	5 per cent.
„ when used in drugs, medicines or chemicals in a proportion less than 20 per cent. of spirit of the strength of London proof	„	„
„ when so used in a proportion of 20 per cent. and upwards -	Per Impl. gallon or 6 quart bottles of the strength of London proof.	Rs. 6, and the duty to be increased or reduced in proportion as the strength of the spirit exceeds or is less than London proof
„ perfumed, in wood or in bottles - - - - -	Per Impl. gallon or 6 quart bottles.	Rs. As. 8 0
„ other sorts - - - - - - - -	Per Impl. gallon or 6 quart bottles of the strength of London proof.	Rs. 6, and the duty to be increased or reduced in proportion as the strength of the spirit exceeds or is less than London proof.
Wines:		
Champagne and all other sparkling wines - - - -	Per Impl. gallon or 6 quart bottles.	Rs. As. 2 8
All other sorts - - - - - - - - -	„	1 0
Liqueurs - - - - - - - - -	„	6 0
OPIUM (not covered by a Government pass) - - - -	Per seer of 80 tolas -	24 0
PETROLEUM - - - - - - - - -	Per Impl. gallon -	Rs. As. P. 0 0 6
Including also the liquids commonly known by the names of rock oil, Rangoon oil, Burma oil, kerosine, paraffine oil, mineral oil, petroline, gasoline, benzol, benzoline, benzine, and any inflammable liquid which is made from petroleum, coal, schist, shale, peat or any other bituminous substance or from any products of petroleum.		
Exception.—Petroleum which has its flashing point at or above two hundred degrees of Fahrenheit's thermometer and is proved to the satisfaction of the Customs Collector to be intended to be used exclusively for the batching of jute or other fibre or for lubricating purposes.		
SALT - - - - - - - - -	Per Indian maund of 82⅔ lbs. avoirdupois weight.	The rate at which excise duty is for the time being leviable on salt manufactured in the place where the import takes place, viz., Re. 1 in Burma and Rs. 2.8 elsewhere.
Dry salt fish and wet salt fish (*ngapi*) imported into Burma from any place beyond the limits of British India - - - -	„	Such rate or rates of duty, not exceeding 12 annas, as the Governor-General in Council may, by notification in the Gazette of India, from time to time prescribe.

EXPORT TARIFF.

RICE (whether husked or unhusked), including rice-flour - -	Per Indian maund of 82⅔ lbs. avoirdupois weight.	Rs. As. 0 3

No. 19.

Distribution of Private Import Trade among the Principal Ports.

		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
Bengal:						
Calcutta	Merchandise	25,651,273	25,057,869	25,982,918	25,297,249	23,169,119
	Treasure	1,416,628	1,183,232	3,918,449	3,359,985	2,261,022
Chittagong	Merchandise	49,919	67,676	87,553	48,559	42,985
	Treasure	0	0	0	0	0
Other Ports	Merchandise	904	6,025	9,846	1,055	13,162
	Treasure	0	0	0	0	0
Bombay:						
Bombay	Merchandise	26,383,859	26,341,117	27,512,160	25,716,304	25,224,342
	Treasure	12,108,778	15,871,836	17,581,724	11,015,950	14,473,740
Karachi	Merchandise	3,562,957	3,384,799	3,702,344	3,972,239	3,416,769
	Treasure	176,495	119,172	84,823	111,891	137,844
Other Ports	Merchandise	119,970	81,922	31,013	44,302	45,267
	Treasure	0	600	0	0	100
Madras:						
Madras	Merchandise	4,958,544	5,426,067	5,473,167	5,131,745	4,477,863
	Treasure	82,393	151,749	250,240	150,798	24,780
Tuticorin	Merchandise	313,982	293,619	306,184	315,647	295,851
	Treasure	2,000	21,458	250	0	21,210
Negapatam	Merchandise	281,395	210,882	198,862	203,170	213,269
	Treasure	1,287	525	1,917	1,988	2,353
Coconada	Merchandise	4,227	2,611	2,628	69,906	17,819
	Treasure	0	0	0	0	0
Tellicherry	Merchandise	10,013	9,832	17,293	10,162	7,830
	Treasure	0	0	1,980	0	0
Calicut	Merchandise	36,478	32,485	29,939	55,993	36,128
	Treasure	0	0	0	0	0
Cochin	Merchandise	15,388	16,988	15,269	33,240	35,222
	Treasure	0	0	0	0	0
Mangalore	Merchandise	26,012	26,431	26,472	22,903	25,587
	Treasure	0	0	0	0	0
Other Ports	Merchandise	150,019	147,403	149,511	161,169	138,827
	Treasure	50,868	97,371	69,520	64,981	70,543
Burma:						
Rangoon	Merchandise	4,852,089	5,269,837	5,357,201	5,383,848	5,300,380
	Treasure	3,587	9,752	9,108	16,480	17,364
Moulmein	Merchandise	121,275	123,852	89,247	83,906	102,804
	Treasure	390	1,387	650	0	0
Bassein	Merchandise	4,145	35,261	19,787	14,132	8,611
	Treasure	0	0	0	0	0
Akyab	Merchandise	8,749	3,661	5,185	5,585	4,884
	Treasure	0	0	0	0	0
Other Ports	Merchandise	19,120	21,784	18,319	16,331	28,311
	Treasure	2,584	2,218	826	590	3,207
Total Imports	Merchandise	66,570,318	66,560,121	69,034,898	66,587,445	62,605,030
	Treasure	13,844,960	17,459,300	21,919,487	14,722,663	17,009,810

No. 20.

Distribution of Private Export Trade among the Principal Ports.

		1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
Bengal:						
Calcutta	Merchandise	36,636,990	38,054,509	35,767,655	38,635,852	40,471,000
	Treasure	52,900	133,354	168,962	277,804	570,643
Chittagong	Merchandise	1,085,227	1,444,889	1,236,586	896,830	840,154
	Treasure	0	0	0	0	0
Other Ports	Merchandise	98,624	173,291	255,036	408,319	318,730
	Treasure	0	0	0	0	0
Bombay:						
Bombay	Merchandise	38,908,473	39,406,899	37,859,409	40,635,677	40,450,332
	Treasure	1,454,842	1,566,791	1,682,879	2,671,170	6,129,336
Karachi	Merchandise	3,814,256	5,020,923	4,699,755	7,338,746	4,129,523
	Treasure	74,846	48,016	24,639	40,285	55,952
Other Ports	Merchandise	45	58	58	84	54
	Treasure	295	0	192	252	230
Madras:						
Madras	Merchandise	4,338,134	4,913,214	4,547,573	3,786,228	4,589,671
	Treasure	112,505	60,142	123,308	54,000	110,000
Tuticorin	Merchandise	1,341,108	1,971,123	1,729,851	1,332,579	1,506,793
	Treasure	0	30,000	55,000	75,000	20,000
Negapatam	Merchandise	571,256	541,428	510,147	486,360	531,696
	Treasure	168	0	1,766	50	6,200
Coconada	Merchandise	797,593	1,037,968	784,338	665,633	813,042
	Treasure	0	0	0	0	0
Tellicherry	Merchandise	883,975	758,363	890,415	992,837	929,184
	Treasure	6	0	0	0	0
Calicut	Merchandise	484,788	388,162	346,356	512,084	570,844
	Treasure	741	2,232	4,200	16,575	1,315
Cochin	Merchandise	432,054	369,112	308,338	430,523	570,693
	Treasure	0	0	0	0	0
Mangalore	Merchandise	452,068	337,614	340,695	505,883	476,723
	Treasure	0	0	0	0	0
Other Ports	Merchandise	1,024,758	1,197,951	1,256,658	1,325,849	1,136,775
	Treasure	7,200	1,200	1,500	1,250	318
Burma:						
Rangoon	Merchandise	4,457,932	5,623,864	7,080,362	7,230,680	7,224,849
	Treasure	0	185	9,460	6,800	35,000
Moulmein	Merchandise	664,710	674,285	784,602	1,041,352	836,095
	Treasure	0	0	0	0	0
Akyab	Merchandise	453,226	607,677	783,348	897,650	529,539
	Treasure	0	0	0	0	0
Bassein	Merchandise	504,205	842,150	903,951	848,709	535,847
	Treasure	0	0	0	0	0
Other Ports	Merchandise	28,749	33,382	50,598	64,135	74,453
	Treasure	0	0	0	0	0
Total Exports	Merchandise	96,978,171	103,396,862	100,135,731	108,036,010	106,535,997
	Treasure	1,703,497	1,841,920	2,071,906	3,143,186	6,928,994

No. 21.

VESSELS ENTERED and CLEARED, distinguishing STEAMERS and SAILING VESSELS, and STEAMER which proceeded viâ SUEZ CANAL.

	1888-89.		1889-90.		1890-91		1891-92.		1892-93.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	ENTERED.									
STEAM:										
Viâ Suez Canal	755	1,408,331	677	1,331,767	752	1,487,111	1,043	2,019,483	782	1,637,806
„ other Routes	853	1,098,600	995	1,321,288	1,295	1,540,302	1,209	1,459,506	1,155	1,354,174
	1,608	2,506,931	1,672	2,653,055	2,047	3,027,413	2,252	3,478,989	1,937	2,991,980
SAILING	3,573	943,248	3,610	1,005,126	3,443	835,428	3,434	829,386	3,447	910,216
TOTAL	5,181	3,450,179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375	5,384	3,902,196
	CLEARED.									
STEAM:										
Viâ Suez Canal	967	1,735,626	931	1,723,597	965	1,821,405	1,268	2,412,341	929	1,887,457
„ other Routes	665	825,805	753	955,043	1,058	1,161,577	977	1,074,911	988	1,047,862
	1,632	2,561,431	1,684	2,678,640	2,023	2,982,982	2,245	3,487,252	1,917	2,935,319
SAILING	3,672	971,722	3,707	978,765	3,510	839,131	3,227	795,024	3,422	854,776
TOTAL	5,304	3,533,153	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276	5,339	3,790,095

No. 22.

VESSELS ENTERED and CLEARED, distinguishing STEAMERS and SAILING VESSELS with CARGOES and in BALLAST.

	1888-89.		1889-90.		1890-91.		1891-92.		1892-93.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	ENTERED.									
WITH CARGOES:										
Steam	1,351	2,157,769	1,355	2,200,273	1,570	2,480,276	1,617	2,561,855	1,585	2,544,440
Sailing	2,354	625,375	2,416	619,901	2,091	510,976	2,153	455,262	2,238	442,105
	3,705	2,783,144	3,771	2,820,174	3,661	2,991,252	3,770	3,017,117	3,823	2,986,545
IN BALLAST:										
Steam	257	349,162	317	452,782	477	547,137	635	917,134	352	447,540
Sailing	1,219	317,873	1,194	385,225	1,352	324,452	1,281	374,124	1,209	468,111
	1,476	667,035	1,511	838,007	1,829	871,589	1,916	1,291,258	1,561	915,651
Total	5,181	3,450,179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375	5,384	3,902,196
	CLEARED.									
WITH CARGOES:										
Steam	1,567	2,487,854	1,627	2,623,030	1,831	2,870,715	2,157	3,427,402	1,803	2,846,657
Sailing	2,856	896,598	2,854	905,306	2,717	772,693	2,551	708,371	2,782	759,331
	4,423	3,384,452	4,481	3,528,336	4,548	3,643,408	4,708	4,135,773	4,585	3,605,988
IN BALLAST:										
Steam	65	55,610	57	55,610	192	112,267	88	59,850	114	88,662
Sailing	816	73,459	853	73,459	793	66,438	676	86,653	640	95,445
	881	129,069	910	129,069	985	178,705	764	146,503	754	184,107
Total	5,304	3,657,405	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276	5,339	3,790,095

No. 23.

VESSELS ENTERED and CLEARED, distinguishing COUNTRIES.

	1888-89.		1889-90.		1890-91.		1891-92.		1892-93.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	ENTERED.									
UNITED KINGDOM	859	1,554,279	698	1,341,475	730	1,433,654	716	1,450,896	662	1,403,162
BRITISH POSSESSIONS:										
Malta	0	0	1	46	0	0	6	8,254	2	2,684
Aden	122	182,339	115	173,482	106	161,872	112	179,150	96	161,807
Ceylon	2,504	418,914	2,395	433,404	2,681	537,722	2,452	460,681	2,496	483,280
China, Hong Kong	95	158,094	87	147,448	101	162,579	92	153,377	86	142,866
Straits Settlements	308	343,480	375	437,331	380	480,268	368	480,732	289	377,852
Cape Colony	26	28,086	59	78,383	43	55,264	58	78,498	65	90,094
Mauritius	78	99,623	82	119,534	90	130,182	92	106,321	91	107,115
Natal	35	27,039	48	50,148	41	39,883	42	43,148	44	42,854
Demerara	0	0	2	3,058	0	0	1	1,425	1	1,613
Australia	59	94,074	69	104,330	20	37,061	30	49,311	38	59,993
Other Countries	1	1,469	1	1,620	2	3,267	2	2,393	6	7,990
	3,228	1,353,118	3,234	1,548,784	3,464	1,608,098	3,255	1,563,290	3,214	1,478,148
FOREIGN COUNTRIES:										
Austria	21	42,923	25	53,391	22	49,161	25	52,105	26	55,703
Belgium	6	7,858	12	23,429	13	23,508	11	19,752	9	15,842
France	2	2,550	2	2,166	1	851	29	57,751	5	9,253
Germany	7	7,726	25	37,434	54	88,870	87	142,277	65	114,627
Greece	1	1,997	0	0	0	0	0	0	0	0
Holland	0	0	0	0	0	0	0	0	1	1,640
Italy	20	52,205	18	49,407	19	47,141	59	113,681	19	46,686
Portugal	0	0	0	0	0	0	1	1,355	0	0
Spain	0	0	0	0	0	0	3	4,895	0	0
Arabia	263	66,490	300	76,265	275	71,771	310	76,651	280	87,082
China, Treaty Ports	15	26,819	17	34,394	22	43,182	20	38,990	35	65,667
Japan	2	2,844	8	11,885	12	18,296	3	4,834	4	8,180
Java	6	9,450	26	34,163	18	26,181	23	35,067	17	26,127
Maldive Islands	28	3,124	24	2,982	14	1,751	22	2,815	21	3,039
Mekran and Sonmiani	165	7,989	216	10,690	227	10,683	245	11,579	235	11,162
Persia	138	62,390	133	61,234	126	61,909	112	59,617	129	63,496
Russia in Asia	35	53,547	26	45,172	30	49,329	51	79,947	48	82,349
Siam	16	4,556	17	6,293	32	4,905	24	4,208	16	2,819
Sumatra	12	10,118	8	6,760	11	15,683	7	9,043	6	6,506
Turkey in Asia	199	42,480	269	57,728	194	48,192	282	65,166	284	64,042
Egypt	9	11,838	6	8,993	10	13,553	182	298,794	45	82,971
Mozambique	25	13,298	25	12,991	10	3,256	18	3,454	17	6,681
Réunion	21	11,879	21	14,022	22	17,078	22	14,477	27	14,237
Zanzibar	36	18,906	40	23,455	47	29,860	48	24,376	64	39,635
America, South and Central	5	5,740	36	48,500	37	48,282	55	68,402	93	125,075
United States	43	64,927	80	132,295	56	101,945	41	72,743	40	70,150
West Indies	0	0	1	1,147	1	2,352	0	0	0	0
Other Countries	19	11,128	15	13,126	43	43,350	35	32,210	22	17,917
	1,094	542,782	1,350	767,922	1,296	821,089	1,715	1,294,189	1,508	1,020,886
TOTAL	5,181	3,450 179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375	5,384	3,902,196

No. 23—*concluded.*

VESSELS ENTERED and CLEARED, distinguishing COUNTRIES—*concluded.*

	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	CLEARED.									
UNITED KINGDOM	771	1,380,150	749	1,368,914	643	1,226,001	703	1,399,668	648	1,315,489
BRITISH POSSESSIONS:										
Malta	19	26,789	15	22,252	39	60,284	27	41,758	4	5,985
Aden	47	60,735	44	59,627	48	61,965	44	59,081	41	61,415
Ceylon	2,550	326,616	2,546	354,474	2,731	400,589	2,332	338,006	2,581	363,543
China, Hong Kong	86	141,972	80	127,374	87	142,691	92	152,537	87	145,889
Straits Settlements	233	232,497	260	266,361	306	340,453	281	324,628	231	268,519
Cape Colony	12	4,370	8	4,166	8	6,351	7	6,277	7	5,951
Mauritius	52	65,793	55	84,870	57	83,125	80	89,694	55	52,120
Natal	23	10,303	19	10,756	10	6,121	21	14,910	17	10,865
Demerara	12	13,006	12	15,467	11	15,364	14	18,665	15	18,821
West Indies	12	13,805	9	9,343	10	11,331	19	18,226	12	13,448
Australia	19	29,566	23	39,071	21	38,351	23	40,709	24	40,692
Other Countries	7	7,079	7	8,818	6	6,924	7	8,263	5	6,426
	3,072	932,581	3,078	1,002,574	3,334	1,173,549	2,947	1,112,754	3,079	993,674
FOREIGN COUNTRIES:										
Austria	25	52,061	26	56,975	26	54,945	23	50,264	29	58,298
Belgium	72	122,900	70	140,439	56	114,998	96	186,418	47	95,900
France	158	272,839	118	206,321	116	202,768	208	370,180	121	238,667
Germany	20	31,963	39	61,474	66	117,485	77	137,068	98	178,167
Greece	0	0	1	1,619	0	0	0	0	0	0
Holland	11	16,842	11	18,054	10	17,139	23	42,765	14	25,672
Italy	48	92,733	39	83,839	40	77,598	41	86,945	32	69,811
Portugal	0	0	1	984	1	1,691	1	474	1	852
Russia	4	5,415	4	6,365	1	1,239	4	5,819	5	6,955
Spain	2	3,163	3	3,883	3	5,574	1	1,906	6	9,016
Arabia	223	61,495	246	72,343	249	79,755	234	71,538	248	83,031
China, Treaty Ports	20	34,433	29	60,488	28	57,452	34	69,700	48	96,082
Japan	1	1,555	1	1,602	23	36,173	0	0	3	7,209
Java	9	16,459	1	1,932	5	9,027	4	5,257	7	12,180
Maldive Islands	37	4,293	35	4,244	19	2,426	35	4,178	16	1,977
Mekran and Sonmiania	198	9,744	222	10,596	223	10,872	240	12,474	216	10,651
Persia	129	55,939	147	64,685	127	63,361	150	76,948	135	64,906
Russia	0	0	0	0	0	0	1	1,450	0	0
Siam	7	3,975	13	4,390	13	2,583	6	2,447	8	5,793
Sumatra	4	1,507	3	971	4	1,629	2	506	4	1,085
Turkey in Asia	85	32,655	96	28,526	72	26,183	106	42,378	121	37,469
Egypt	158	215,078	173	241,916	185	288,050	265	404,584	157	254,511
Mozambique	35	13,089	42	14,456	49	14,134	49	10,578	58	14,878
Réunion	24	12,676	19	9,730	27	17,273	17	9,383	24	12,182
Zanzibar	71	17,738	78	19,683	69	14,678	72	17,092	63	15,925
America, South and Central	23	23,392	43	40,984	39	44,120	54	54,465	68	62,042
United States	68	112,340	74	119,079	81	151,144	58	93,593	59	104,616
West Indies	2	2,154	3	1,584	3	2,931	2	1,138	1	542
Other Countries	27	4,034	27	8,755	21	7,445	19	10,306	23	12,515
	1,461	1,220,472	1,564	1,285,917	1,556	1,422,563	1,822	1,769,854	1,612	1,480,932
TOTAL	5,304	3,533,153	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276	5,339	3,790,095

No. 24.

VESSELS ENTERED and CLEARED, distinguishing NATIONALITIES.

	1888-89.		1889-90.		1890-91.		1891-92.		1892-93.	
	No.	TONNAGE.	No.	TONNAGE	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
	ENTERED.									
BRITISH	1,818	2,814,877	1,869	2,960,551	2,118	3,161,765	2,325	3,563,678	2,047	3,158,225
BRITISH INDIAN	1,071	155,234	1,093	156,670	1,021	153,378	953	146,659	1,035	150,124
FOREIGN:										
Austrian	49	87,937	50	90,214	50	87,628	49	81,415	51	88,067
Danish	4	790	3	912	0	0	4	2,453	8	5,340
Dutch	2	1,900	5	4,129	18	13,610	5	4,713	3	3,658
French	59	51,923	64	64,490	69	62,121	70	53,973	54	41,998
German	52	56,147	70	93,319	90	135,976	107	165,766	143	203,785
Italian	76	109,224	58	91,557	50	80,822	46	85,238	44	73,541
Norwegian	17	13,495	34	30,616	20	19,206	45	41,624	34	32,305
Portuguese	4	323	8	523	3	187	16	1,815	29	3,279
Russian	1	1,821	2	3,439	0	0	1	2,244	1	2,005
Turkish	35	7,487	16	4,444	10	2,646	26	4,224	23	3,930
Swedish	3	1,055	3	2,350	6	2,285	5	3,877	2	1,291
Arabian	303	41,343	343	44,068	269	35,674	283	37,470	289	37,203
Mekranese	27	797	26	708	32	1,077	40	983	26	721
Persian	3	437	5	758	0	0	2	244	3	839
Siamese	6	3,131	5	2,982	2	1,116	7	2,210	20	5,021
American	15	20,961	16	22,197	13	19,134	12	15,814	3	3,416
Others	1	333	0	0	6	2,190	3	3,881	1	1,502
	657	399,104	708	456,706	638	463,672	721	507,944	734	507,901
NATIVE	1,635	80,964	1,612	84,254	1,713	84,026	1,687	90,094	1,568	85,946
TOTAL	5,181	3,450,179	5,282	3,658,181	5,490	3,862,841	5,686	4,308,375	5,384	3,902,196
	CLEARED.									
BRITISH	1,872	2,898,135	1,898	2,991,705	2,133	3,174,670	2,335	3,583,354	2,010	3,072,646
BRITISH INDIAN	1,125	155,820	1,075	149,081	1,002	140,850	977	148,963	1,063	156,185
FOREIGN:										
Austrian	52	92,638	50	91,725	43	77,131	49	84,115	52	89,625
Danish	4	790	4	1,212	0	0	3	1,770	7	4,833
Dutch	2	1,092	7	6,537	18	13,610	5	4,713	3	3,658
French	58	51,915	57	51,914	57	48,593	60	45,800	52	37,196
German	49	54,118	68	87,677	77	117,689	96	143,496	117	162,155
Italian	75	105,582	56	85,643	50	79,054	44	82,688	49	77,699
Norwegian	19	15,471	34	31,261	22	22,310	40	36,577	39	37,177
Portuguese	11	1,117	10	864	7	725	11	2,316	16	3,166
Russian	1	1,821	2	3,439	0	0	1	2,244	1	2,005
Turkish	16	4,525	14	3,494	10	3,150	16	3,745	18	3,224
Swedish	2	590	4	2,815	5	1,777	6	4,405	1	973
Arabian	252	36,041	277	35,926	227	33,276	246	35,121	270	39,270
Mekranese	27	824	26	707	29	933	44	1,189	25	614
Persian	2	190	4	556	1	202	4	413	4	1,011
Siamese	6	3,131	5	2,982	2	1,116	7	2,210	18	5,004
American	17	23,889	15	21,846	14	19,257	11	15,100	8	11,694
Others	1	333	0	0	6	2,189	2	3,002	1	1,502
	594	394,067	633	428,598	568	421,012	645	468,904	681	480,806
NATIVE	1,713	85,131	1,785	88,021	1,830	85,581	1,515	81,055	1,585	80,458
TOTAL	5,304	3,533,153	5,391	3,657,405	5,533	3,822,113	5,472	4,282,276	5,339	3,790,095

No. 25.

VESSELS BUILT at INDIAN PORTS.

	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
BENGAL:										
Chittagong: Sailing	7	814	2	374	3	510	7	1,034	1	133
Balasore „	1	21	0	0	3	26	0	0	0	0
Calcutta: Steam	0	0	0	0	0	0	1	80	0	0
BOMBAY:										
Bombay: Steam	0	0	2	27	3	136	0	0	0	0
Sailing	5	244	8	368	1	82	1	96	8	236
Karachi „	7	661	2	31	3	337	5	252	4	195
Other Ports „	65	1,462	70	1,441	42	880	43	1,014	40	905
MADRAS:										
Coconada: Sailing	4	400	0	0	0	0	0	0	0	0
Calicut „	2	48	4	78	2	63	5	154	0	0
Tuticorin „	3	284	0	0	0	0	0	0	0	0
Masulipatam „	4	279	2	52	1	17	4	188	0	0
Other Ports „	16	349	14	597	15	460	16	328	12	356
BURMA:										
Rangoon: Sailing	0	0	0	0	0	0	0	0	0	0
Moulmein „	2	190	1	25	1	32	2	96	0	0
Tavoy „	0	0	0	0	6	252	1	48	2	19
Other Ports „	2	29	1	13	0	0	1	26	5	297
TOTAL	118	4,781	106	3,006	80	2,795	86	3,316	72	2,141

No. 26.

VESSELS FIRST REGISTERED at INDIAN PORTS.

	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.	No.	TONNAGE.
Under the English Merchant Shipping Act:										
Bengal: Steam	2	813	1	754	0	0	2	2,204	1	982
Sailing	1	1,061	1	339	1	517	0	0	0	0
Bombay: Steam	6	4,118	4	3,166	5	4,658	5	3,743	0	0
Sailing	1	18	2	214	0	0	0	0	0	0
Burma: Steam	2	59	0	0	0	0	0	0	2	73
Sailing	1	161	0	0	0	0	0	0	1	809
	13	6,230	8	4,473	6	5,175	7	5,947	4	1,864
Under the Indian Merchant Shipping Acts:										
Bengal: Sailing	3	69	2	63	9	303	0	0	1	214
Bombay: Steam	1	21	2	27	4	149	0	0	0	0
Sailing	94	3,318	94	2,492	62	2,150	83	2,491	81	3,062
Madras: Sailing	41	2,230	25	980	29	1,274	31	1,009	20	552
Burma: Sailing	37	1,408	19	556	14	954	17	613	12	410
	176	7,046	142	4,118	118	4,880	131	4,113	114	4,238
TOTAL	189	13,276	150	8,591	124	10,005	138	10,060	118	6,102

Revenue and Statistics
Department, India Office,
24th January 1894.